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ABSTRACT

This annotated bibliography of research in agricultural education in the Philippines includes 54 studies completed between 1930 and 1959. They are arranged alphabetically by author and outlined according to purpose, method, and findings. A related document available in this issue as VT 012 975 includes 77 studies between 1960 and 1968. (GB)

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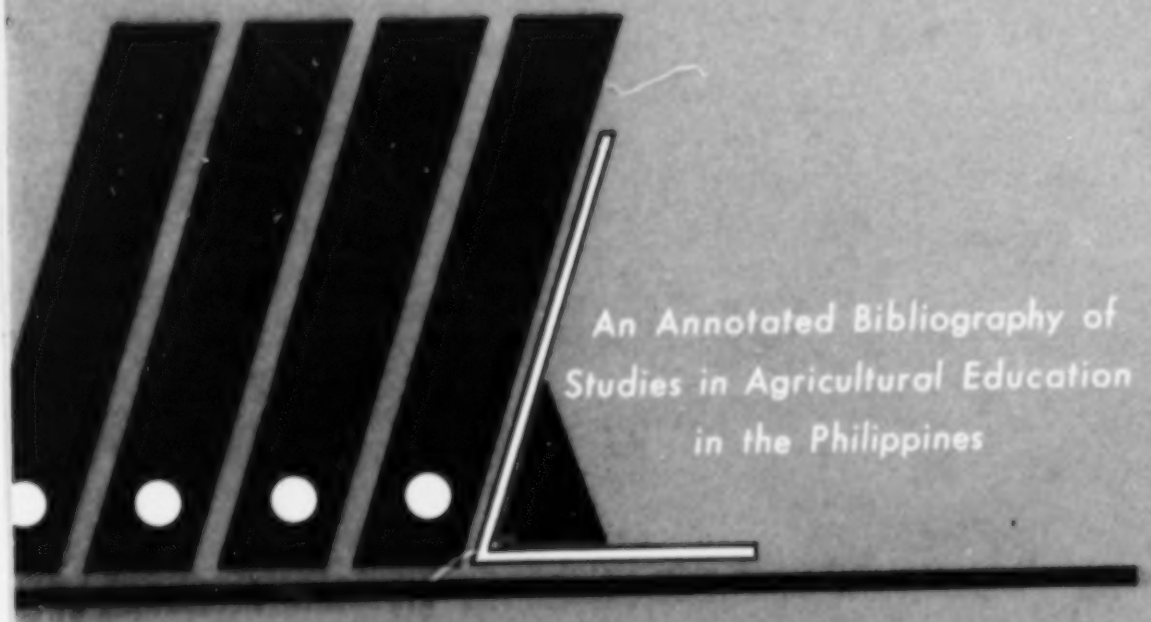
Summaries of Studies in Agricultural Education in the Philippines

1930-1959



An Annotated Bibliography of Studies in Agricultural Education in the Philippines

UNIVERSITY OF THE PHILIPPINES
COLLEGE OF AGRICULTURE
COLLEGE, LAGUNA

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Summaries of Studies

in

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in

the Philippines

1930-1959

UNIVERSITY OF THE PHILIPPINES
COLLEGE OF AGRICULTURE
COLLEGE, LAGUNA
1968

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CONTENTS

Editors' Comment v

Foreword vi

Introduction vii

Summaries of Studies, 1930-1959 1

Classified Index of Studies 43

3

EDITORS' COMMENT

This bulletin, reporting studies completed during the period 1930-1959, was first issued in 1959 as an 8½ x 11 multilith publication by the University of the Philippines, College of Agriculture. Produced by the joint effort of the Agricultural Education Division of the Bureau of Public Schools and the five Philippine public institutions then engaged in the training of teachers of agriculture for secondary schools, the original publication was distributed to the project participants and to the national agricultural schools, as well as to the Agricultural Education Departments of certain American universities.

In 1968, the Association of Colleges of Agriculture, Inc., decided to assemble the abstracts of studies completed during the period 1960-1968 as a separate 6 x 9 publication entitled *Summaries of Studies in Agricultural Education, Supplement 1.* Since the supply of the original publication had been exhausted, it was decided to reprint it, also as a 6 x 9 publication, so that the entire spectrum of completed research in this field may be readily available to the members of the profession. For the convenience of the reader, a classified subject index has been added to this reprint.

MARTIN V. JARMIN
HAROLD R. CUSHMAN
Department of Agricultural Education
U.P. College of Agriculture
College, Laguna
Philippines

October, 1968

FOREWORD

Vocational education in agriculture has been greatly intensified in the Philippines since the end of the recent World War. A number of new agricultural schools and colleges have been established and more agricultural subjects have been introduced in the curricular offerings in the high school and elementary levels. This educational change is fraught with great potentialities toward helping promote the economic and social well-being of the country. Fortunately for the implementation of the program a number of local studies have already been conducted during the past thirty years bearing on the qualification of the teachers, the pupils, the curricular structure and the impact of these agricultural schools and colleges on the life of the country. Papers bearing on these research results, however, are scattered in different journals and some of them have not been published and are extant only in manuscripts deposited in libraries in the Philippines and abroad.

To help place these studies in the hands of educators and other people who are interested in formulating and developing agricultural education in the Philippines, it has been deemed important that summaries of these various studies be brought together and made accessible in one single volume. The present publication is the result of the joint efforts of the Agricultural Education Division of the Bureau of Public Schools and the five public institutions in the Philippines who are engaged in training teachers of agriculture for secondary schools, namely, Baybay National Agricultural School, Central Luzon Agricultural College, Mindanao Agricultural College, Mountain National Agricultural School and the College of Agriculture, University of the Philippines. The idea was discussed and agreed upon by the representatives of these various institutions who attended the Second Annual Agriculture Teacher Education Conference called by the Bureau of Public Schools at Baybay, Leyte, on October 28 to 31, 1958. It was their belief that sharing research results by the various training institutions and the Bureau of Public Schools could result in a lustier professional growth among all concerned.

Inasmuch as the majority of the studies reported on were conducted in the College of Agriculture, it was deemed proper that this entity undertake the responsibility of publishing this, the first "Summaries of Studies in Agricultural Education in the Philippines."

L. B. UICHANCO, Dean
College of Agriculture
University of the Philippines

March, 1959

INTRODUCTION

This "Summaries of Studies in Agricultural Education in the Philippines" fills a long-felt need for a handy volume which contains in condensed form the findings of studies in agricultural education conducted in the country during the past twenty-five years. This publication makes available to vocational educators valuable data and information which would otherwise remain inaccessible or unknown to them. Indeed, the summaries of studies offer to agricultural school teachers, instructors, teacher trainers, supervisors, researchers and administrators information which is essential for them to know.

The data and information about agricultural education summarized in this volume touch upon vocational agriculture and agricultural teacher-education. Educational workers concerned with curriculum construction and preparation and enrichment of courses of study would find the summaries of studies very helpful as these indicate the modifications that need to be made in the present courses. Agricultural school teachers, supervisors and administrators would find in this volume a basis for instituting improvements in their schools. In short, this publication points out certain lines of reform in our system of agricultural education.

The findings reported in this volume, the first of a series of summaries of studies, will not, however, continue to be applicable as the years go by. Conditions change fast. The growing needs of the national economy will determine what changes should be made in agricultural education in the future. This implies the need for continuous research activities that would look into the requirements of the national economy and make agricultural education ever-responsive to the changing demands of our growing nation.

The present volume of these summaries of studies, however, may well serve as a sort of guide for meeting the pressing needs of agricultural education in this country.

JOSE CRISANTO, Chief
Agricultural Education Division
Bureau of Public Schools

March, 1959

Summaries of Studies, 1930-1959

1. ALIPIT, NICOMEDES A. An Analysis of the Problems and Role of the Mountain National Agricultural School in the Progress of Mountain Province. Thesis, M.S., 1958, Baguio Colleges. 230 p. Library, Mountain National Agricultural School, La Trinidad, Benguet, Mountain Province.

Purpose. To analyze what the graduates were actually doing in the field to help themselves and their fellowmen in the development of the Mountain Province.

Method. Questionnaires were mailed to graduates from 1924 to date. Seventy-two per cent were returned. Additional facts were gathered from interviews, school records and publications.

Findings and Interpretations. The findings on occupational distribution of the graduates were summarized as follows: (1) Of the 636 Agriculture Course graduates only six per cent were engaged in agricultural occupations, 58 per cent were engaged in non-agricultural occupations and 36 per cent were unknown. (2) Thirty-eight per cent of the 214 Home Economics Course graduates were employed in homemaking occupations, 44 per cent were engaged in non-homemaking jobs and 18 per cent were unknown. (3) Fifty-eight per cent of the 402 Special Normal Course graduates were in the teaching profession, seven per cent in the non-teaching professions while 35 per cent were unknown. (4) Fifty-nine per cent of the 58 Farm Mechanics Course graduates were engaged in mechanical occupations, five per cent were employed in non-mechanical jobs and 36 per cent were unheard from. (5) Sixty-four per cent of the 55 Special Vocational Course graduates were engaged in special vocational occupations, 25 per cent were engaged in business while 11 per cent were also unheard from.

The facts assembled point out that agriculturally, the Mountain National Agricultural School had contributed little to the economic development of the Mountain Province; but the school had made a positive contribution to its educational progress.

The most important reasons why the agriculture graduates of the school did not undertake farming after their graduation were: (1) lack of capital, (2) preparation for college, (3) lack of roads and (4) preparation for non-agricultural jobs.

To help solve the problem of placing the graduates of the Mountain National Agricultural School in occupational jobs for which they were being trained, the following were recommended: (1) It be made a policy to have students sign a contract to undertake farming or continue their studies in vocational agricultural colleges and that graduation certificates could only be issued to those who will have fulfilled the terms of the contract. (2) Improvement of the standard of the Special Secondary Normal Course by granting degrees to those whose general average is 2.75 or better and certificates of completion to those whose general average falls below 2.75. (3) Addition of the following courses to the curricular offerings of the school: woodworking, ceramics, blacksmithing, secretarial, hair

science, practical electricity and practical chemistry. (4) An effective placement program and an agricultural research program be undertaken.

2. ANDAY, CARMELITA A. Elimination of Pupils in the Barrio Schools of Baay and Billoca in Batac, Ilocos Norte. Thesis, B.S., 1956, University of the Philippines. 22 p. Library, U.P. College of Agriculture, College Laguna.

Purposes. To determine: (1) the extent of elimination of pupils in the barrio schools of Baay and Billoca in Batac, Ilocos Norte; (2) the amount of schooling received by pupils who left school, and (3) the educational and occupational interests of in-school and out-of-school children of elementary school age.

Method. Three hundred pupils who were enrolled in the first grade in the barrio schools of Baay and Billoca in Batac, Ilocos Norte, during the academic years 1946-1947 and 1947-1948 were included in the study. Desired data were secured through personal interviews with the children and their parents or guardians. Additional information was secured from the school records of the pupils. Data and information secured were recorded on schedules.

Findings and Interpretations.

(1) Of the 300 pupils included in the study, 54 per cent were boys and 46 per cent were girls. The average age of the boys and girls at enrollment was nine years.

(2) Most of the pupils came from the barrios of Baay (13 per cent), Buñgon (21 per cent) and Billoca (12 per cent).

(3) The parents and guardians of the pupils were engaged in 30 different occupations. The most common means of livelihood were farming and carpentry.

(4) About 49 per cent were graduated from the sixth grade. A large number of the pupils left school during or after completion of the fourth and fifth grades.

(5) The average age at which the pupils were graduated was 15 years. The boys were slightly older than the girls.

(6) The average grade reached by pupils who left school was grade three.

(7) The most important reason for leaving school was financial difficulty, followed by distance of school from home, need for services at home and lack of interest.

(8) The out-of-school pupils left school at an average age of 13 years.

(9) The pupils chose 32 different vocational courses. Most of the boys wanted to be drivers, engineers, carpenters, and poultry and swine raisers; the girls wanted to be embroiderers, stenographers and teachers.

(10) With regards to their occupational choices, a large number of the boys wanted to become farmers, engineers, lawyers and drivers. Many of the girls wanted to be teachers, nurses, housekeepers, dressmakers and pharmacists.

(11) Most of the out-of-school boys were farmers and bakers. The girls were housekeepers, housegirls, salesgirls and dressmakers.

(12) The average annual income for boys was ₱470 and for girls, ₱477.

This study shows that a majority of the pupils left school before they finished the elementary grades because their parents felt they could not afford to keep them in school. Another reason was that the school was far from home. The government should therefore endeavor to provide rural areas with more barrio schools. Parents should be encouraged to keep their school-age children in school longer.

Measures should be taken to help the parents increase their income so that they may have enough money to support their children in school.

The government should also formulate an elementary school curriculum from which pupils who finish the fourth and fifth grades only can receive the greatest possible benefit from their limited stay in school.

3. ANDERSON, RONALD ELMER. Contribution of Protestant Missions to Agriculture in the Philippine Islands. Thesis, M.S., 1956, Iowa State College. 59 p. Library, Iowa State College, Ames.

Purpose. To determine what Protestant foreign missions have accomplished to help improve agricultural conditions in the Philippines.

Method. Information was secured from questionnaires sent to mission stations and institutions, from returned missionaries, from Filipino students, from magazine articles and from Philippine Government reports.

Findings and Interpretations. Questionnaires were returned from four of the seven mission stations and institutions which were conducting work in agricultural education or extension according to Agricultural Missions, Inc. Each of the four stations responding had at least a small amount of land used in its educational program. The facilities of the three largest institutions reporting (Central Philippines College, Mountain View College and Silliman University) had investments in buildings and machinery ranging from $11,000 to $25,000 which were used in connection with their agricultural education work. On the basis of information obtained from the questionnaires and other sources, the author drew the following conclusions:

(1) Protestant missions have been recognized for the contributions which they have made to agriculture in the Philippines.

(2) Protestant mission stations have provided facilities for the education of many Filipino youth for positions of agricultural leadership.

(3) Protestant mission stations have provided help for people in many rural areas which the Government had not reached.

(4) There has been cooperation between many Protestant mission stations and the Government in areas of extension and establishment of cooperatives.

(5) Although a good start appears to have been made in the right direction, Protestant mission station personnel have recognized that much work remains to be accomplished in agricultural education in the Philippine Islands.

4. AVILA, DIMNA V. A Study of the Elimination of Pupils in the Central and Barrio Schools of Tanauan, Leyte. Thesis, B.S., 1953, University of the Philippines. 26 p. Library, U. P. College of Agriculture, College, Laguna.

Purposes. To determine: (1) the extent of elimination of pupils enrolled in the central and barrio schools of Tanauan, Leyte; (2) the amount of schooling received by pupils who left school, and (3) the educational and occupational interests of in-school and out-of-school children of elementary school age.

Method. Data concerning 500 pupils who enrolled in the first grade in 1945 were obtained from school records, personal interviews and questionnaires.

Findings and Interpretations.

(1) The average age of the pupils who entered the first grade in 1945 was eight years.

(2) The parents or guardians of the children were engaged in 39 various occupations. Farming, fishing and carpentry were

the three most common means of livelihood.

(3) Seventy-four per cent of the children who started in Grade I were able to graduate. They graduated at an average age of 14 years.

(4) Of pupils residing in the poblacion, 88 per cent reached the sixth grade. The percentage for barrio pupils was 76.

(5) Sixty-seven per cent of the pupils belonging to the farming group reached the sixth grade, as compared with 83 per cent for the children of the non-farming group.

(6) The average grade completed by the children who left school was 3.7.

(7) The most important reason for leaving school was financial difficulty.

(8) The pupils left school at an average of 14 years of age.

(9) Many of the boys had a desire to study farming, mechanics and engineering. The girls showed inclination for teaching, nursing and dressmaking.

(10) The boys and girls indicated 42 different occupational interests.

(11) The out-of-school children were engaged in 19 various occupations. The average annual income of the group was ₱199.52.

(12) More educational facilities, especially in barrios without schools, would enable a larger proportion of the children to acquire at least six years of elementary education.

(13) The large number of children without definite choice of vocation indicated a need for educational and vocational guidance.

(14) A program of educational and occupational adjustment for out-of-school children was deemed essential to the welfare of the dropouts.

5. BAES, PETRA E. A Study of the Elimination of Pupils in the Central and Barrio Schools of Ibaan, Batangas. Thesis, B.S., 1954, University of the Philippines. 28 p. Library, U.P. College of Agriculture, College, Laguna.

Purposes. To determine: (1) the extent of elimination of pupils enrolled in the central and barrio school and (2) the educational and occupational interests of the in-school and out-of-school children of elementary school age.

Method. The school records of 469 pupils enrolled in the first grade in 1946 in the central and barrio schools in Ibaan, Batangas were consulted for age at entrance, length of stay in school, marks obtained and the highest grade reached. Data on the causes of elimination, educational plans, occupational interests, employment and income were secured through interviews with children and their parents. Questionnaires were mailed to former inhabitants of Ibaan who had moved to other places.

Findings and Interpretations.

(1) The average age of pupils at enrollment was eight.

(2) Of the 469 pupils enrolled in Grade I, 13 per cent came from the poblacion. The rest came from its 23 barrios, in which only nine barrio schools were available. About 32 per cent of the barrio children entered the central school. The majority of the pupils were the children of farmers.

(3) Of the pupils who started in Grade I, 38 per cent were able to complete the elementary grades. The average age at gradaution was 14 years.

(4) Pupils from the poblacion completed an average of 4.8 grades. Pupils from the barrios completed an average of 4.5 grades.

(5) The most graduates, 51 per cent, came from schools with complete intermediate courses. The percentage of graduates was highest (71 per cent) with pupils from the barrios and poblacion with complete elementary courses.

(6) The percentage of graduation was much lower among farm children (51) than amoug non-farm children (31).

(7) The pupils who left school before completion attained an average grade of 3.5.

(8) Lack of financial support, lack of interest and low mental capacity were the main reasons for leaving school.

(9) The average age of pupils upon leaving school was 12.

(10) The vocational courses chosen by in-school girls were dressmaking, homemaking, and nursing. The boys chose engineering, commerce, secretarial and agriculture.

(11) Out-of-school boys preferred to be farmers, soldiers and merchants. Out-of-school girls wanted to become dressmakers and weavers. The in-school boys wanted to become farmers, engineers, clerks and merchants. The girls preferred dressmaking, teaching and homemaking.

(12) Out-of-school girls had a bigger average annual income (₱235.00) than boys (₱175.00).

(13) More schools and better guidance services were needed in Ibaan.

6. BARILE, PERFECTA L. A Study of the Characteristics and Social Conditions of Farm Families in the Barrios of Los Baños, Laguna. Thesis, B.S., 1953, University of the Philippines, 46 p. Library, U. P. College of Agriculture, College, Laguna.

Purpose. To study the characteristics and social conditions of farm families in the barrios of Los Baños, Laguna.

Method. One hundred and fifty farm families were interviewed. Data were collected on an interview schedule.

Findings and Interpretations. Fifty-three per cent of the heads of families were born in the barrio where they were living, 12 per cent in other municipalities of the province and 26 per cent in other provinces. Heads of families ranged from 20 to 74 years of age with an average age of 43 years. The average age of husbands at the time of marriage was 23 years and that of wives 20 years. Family heads had resided in the barrio for an average of 32 years.

The occupations of the family heads were: 23 per cent farmers, 14 per cent laborers, seven per cent carpenters, seven per cent merchants and 39 per cent other occupations. At the time of the survey 135 family heads were employed, five were pensioners and 10 were unemployed. The average annual income of the family heads was ₱1,180.

The compositions of walls in dwellings were as follows: wooden 59 per cent, mixed materials 25 per cent, coconut leaves eight per cent, sawali seven per cent and buri one per cent. Sixty-four per cent of floors were made of bamboo, 23 per cent of wood and 13 per cent of mixed materials. Seventy-five per cent of the roofs were covered with galvanized iron, 17 per cent with nipa and eight per cent with cogon. The average floor area per dwelling was 36 sq. meters or 6.5 sq. meters per person. The average value of the dwelling was ₱676.90.

Household facilities and conveniences discovered in dwellings included: flat iron 60 per cent, running water 45 per cent, electricity 42 per cent, sewing machines 29 per cent, indoor toilet three per cent and refrigerators two per cent.

Fifty-five per cent of the boys and 64 per cent of the girls were in-school. Out-of-school children between the ages of seven and 14 years had completed an average of 4.8 grades; those 15 to 24 years completed an average of 4.7 grades and those over 25 completed an average of 4.6. Forty per cent of the parents had no formal schooling. The average grade completed by parents was 3.2.

The chief recreational activities were reading, movies, chatting and listening to the radio. Only 18 per cent of the families regularly purchased one or more daily papers. Very few family members belonged to organizations.

7. BRUAL, FAUSTINO G. A Study of Former Students of Batangas High School with Special Reference to Their Educational and Occupational Pursuits. Thesis, B.S., 1947, University of the Philippines. 36 p. Library, U.P. College of Agriculture, College, Laguna.

Purpose. To determine the educational attainment and subsequent occupations of the former students of Batangas High School.

Method. Data were obtained from the school records of and personal interviews with 433 former students (289 males, 144 females).

Findings and Interpretations. The average age upon enrollment in the first year of the high school was 14 years. Sixty-two per cent of the students came from the town, 29 per cent from farming barrios and nine per cent from fishing barrios.

Seventy-eight per cent graduated from high school, 39 per cent entered college but only 0.4 per cent graduated from a four-year college. Among the students who entered college 22 per cent studied medicine, 21 per cent commerce, 14 per cent engineering and 13 per cent law.

The most common occupational pursuits of boys (in percentage) were: merchants, 14; clerk, nine; farmer, seven; civilian guard, six; teacher, five; laborer, five; driver, four; typist, four; salesman, three; storekeeper, two; fisherman, two; foreman, one; peddler, one, and tailor, one. All other occupations attracted fewer than one per cent of the former male students.

The most common occupational pursuits of girls (in percentage) were: housekeeper, 29; teacher, 28; merchant, six; salesgirl, six; dressmaker, four; clerk, four; typist, four; U.S. army checker, two; attendant, two; beautician, two; nurse, two; record keeper, one, and cashier, one. All other occupations attracted fewer than one per cent of the former female students.

8. CACHOLA, FELIPE B. A Study of the Occupational Placement of C.L.A.C. Graduates from 1946 to 1950. Thesis, M.S., 1956, Central Luzon Agricultural College. Library, Central Luzon Agricultural College, Muñoz, Nueva Ecija.

Purposes. (1) To determine the occupational placement of C.L.A.C. graduates from 1946 to 1950 and (2) to show the relationship between occupational placement and the prospects of graduates of the secondary agricultural course.

Method. A questionnaire was prepared and sent to each of the graduates of C.L.A.C. during the five-year period, 1946 to 1950. Out of 701 alumni to whom questionnaires were sent, 253 responded (241 male and 12 female gradua'es).

Findings and Interpretations.

(1) More than one-half the number of the alumni surveyed were able to continue their studies in college. Most of the alumni earned their titles and degrees from private colleges and universities.

(2) A large number, 43 per cent, of those alumni who continued in college met difficulties due to deficiencies in some academic subjects, particularly mathematics.

(3) Most of the male graduates with degrees were B.S.A. or B.S.A.E. holders and those with titles were E.T.C. holders. All the female graduates with two-year college preparation were E.T.C. graduates. Two females were degree holders.

(4) Twenty-one per cent of the male and 25 per cent of the female alumni had civil service eligibilities.

(5) In the field of teaching in which both male and female alumni were engaged, most of the male graduates were teachers of agriculture and the females were teachers of academic subjects.

(6) More alumni were employed than jobless. Most of them liked their present employment.

(7) Slightly more than one-half of the male graduates were engaged in occupations allied to agriculture. Only about one-third had actually established themselves in farming. All female alumnae were engaged in occupations not allied to agriculture.

(8) The strongest reason given by alumni for engaging in occupations not allied to agriculture was their personal inclination to the work. This pointed to the fact that enrollment in the secondary agricultural curriculum should have been limited only to those who truly intended to establish themselves in farming. Apparently, a great number of those who enrolled in the secondary agricultural course did so without a true awareness of the real nature and objectives of vocational agriculture instruction.

(9) The average yearly income of male and female alumni was ₱1,698 and ₱1,680 respectively.

(10) A number of C.L.A.C. alumni actively participated in community improvement activities in their respective localities.

(11) Most of the 43 farmer alumni who were actually farming stated that farm mechanics training would have made them better prepared for their occupation.

The following recommendations were made:

(1) The revision of the secondary agricultural curriculum, in order to make it more responsive to the needs and problems of students and of the times, to feature the following suggestions:

(a) the inclusion of farm mechanics in every year of the curriculum;

(b) establishment of a closer relationship between classroom instruction and field or practical work by the adoption of supervised farming techniques and problem-solving methods of instruction;

(c) the use of supervised farming activities as the core of vocational agriculture instruction;

(d) the supervision of supervised farming projects by the teachers who handled the classroom instruction of the students concerned;

(e) emphasis on agricultural economics including farm management and cooperative marketing;

(f) instruction and practice on extension methods and good public relation among fourth year students;

(g) optional specialized instruction in certain agricultural activities in order to make instruction more responsive to the needs and problems of the students and of the communities where the students come from, and

(h) better supervision and in-service guidance of teachers of vocational agriculture.

(2) The acquisition of more up-to-date agricultural books and other references, particularly those written by local authors.

(3) Inclusion of more mathematics subjects like algebra and geometry so that alumni who will go on to collegiate agricultural education will not suffer from subject deficiencies.

9. CAJIGAL, BELGRANO T. A Study of the Occupational Placement of C.L.A.C. Associate in Agricultural Education Graduates from 1953 to 1955. Thesis, M.S., 1956, Central Luzon Agricultural College. 44 p. Library, Central Luzon Agricultural College, Muñoz, Nueva Ecija.

Purposes. To determine: (1) the status of employment of all 'Associate in Agricultural Education' graduates from 1953 to 1955 and (2) the effectiveness of the training given to the graduates during their two-year stay in the Central Luzon Agricultural College.

Method. The questionnaire method was used in this study as it was impossible to interview personally each of the 338 *Associate in Agricultural Education* graduates because they were distributed throughout the Philippines. Each questionnaire contained 18 questions, all directed towards finding out how each graduate was getting along in his field of employment. All responses were classified into four types, namely: those from teachers of agriculture in high schools, either vocational or general; those from teachers of elementary agriculture; those employed in jobs other than teaching agriculture, and those who were unemployed at the time of the survey. Answers to the questionnaire were summarized and tabulated at the Central Luzon Agricultural College.

Findings and Interpre'ations. Sixty-two or 43 per cent of the AAE graduates surveyed found employment in places other than their respective hometowns.

Fifty-seven or 30 per cent were not practicing as teachers of agriculture but were in other work related to agriculture.

The status of employment of forty-six or 37 per cent was only temporary owing to their lack of civil service eligibility.

Sixty-three or 70 per cent obtained their employment by personally applying for the job and without any influential backing.

Seventy-seven or 73 per cent did not find immediate employment after their graduation, and fifty or 26 per cent never succeeded in getting employment.

Thirty-eight or 20 per cent succeeded in obtaining teaching positions at the high school level although they were trained to teach elementary agriculture only. This pointed to the lack of qualified teachers of agriculture at the high school level.

In order to develop AAE graduates who would be more responsive to the needs of the service, particularly in the barrio elementary school, the following subjects have been recommended for addition to the curriculum: Music, Industrial Arts, Arithmetic, Soils, National Language, Farm Mechanics, Cattle and Carabao Husbandry, Higher Agronomy, Tests and Measurements, Landscaping, Trade and Shop, Agricultural Economics and Extension Methods.

Based on the findings of this study, the following recommendations were suggested to further improve the Associate in Agricultural Education Course: (1) inasmuch as elementary schools of the Bureau of Public Schools are the surest market for the AAE graduates, subjects included in the AAE curriculum should be responsive to the needs of teaching in the elementary schools, particularly the rural elementa-

ry school, and (2) to fully qualify the AAE graduates to teach in the elementary schools, attempts should be made to recommend to the Bureau of Civil Service (now Civil Service Commission) that examinations for teachers of agriculture be given every year, possibly in April or May.

10. CARMELLO, NICHOLAS C.; LACTAO, LUCIANO E., and SACAY, FRANCISCO M. A Prewar Study of the Availability of Public School Education to Children in the Barrios of Bay and Calauan, Laguna. 1949, College of Agriculture, University of the Philippines. The Philippine Agriculturist 32:312-317.

Purpose. To study the availability, accessibility and extent of formal education available to the barrio children.

Method. This survey was performed in nine barrios of Bay and seven barrios in Calauan, Laguna. The study included 1,053 children in 604 families.

Personal interviews were made with the people in the barrios and data were recorded on interview schedules prepared in the Department of Agricultural Education.

Findings and Interpretations. The majority or 72 per cent of the people in the barrios of Bay and Calauan were engaged in agricultural pursuits. Another 10 per cent of the people were engaged in fishing.

Six of the 17 barrios studied had schools which offered two to four grades. Sixty-four per cent of the children from seven to 14 years of age were attending school. Ten per cent of the youth between 15 and 24 years of age were still in school. A higher proportion of the boys attended than was true for the girls.

The children of elementary school age who were out of school had attended one year of school on the average. Among the boys and girls 15 to 24 years of age who were out of school, the average grade completed was two.

The principal reason given for dropping out of school was lack of financial means. Poor health and distance were also mentioned as important causes by one-fourth of the children studied. There was a definite tendency for the percentage of out-of-school children to rise as the distance between school and homes increased.

11. CEDILLO, VALENTIN G. Qualifications of Agricultural Teachers in General, Agricultural and Rural High Schools. Non-Thesis Study, 1955, College of Agriculture, University of the Philippines. The Philippine Agriculturist 39(4):226-232.

Purposes. To determine: (1) the educational and professional qualifications of teachers of agriculture in the general, agricultural and rural high schools; (2) the factors affecting their efficiency; (3) their deficiencies in teacher preparation; (4) their in-service training since entrance into the teaching service, and (5) the means of improving the qualifications of prospective teachers and those already in the service.

Method. Questionnaire responses were received from 260 high schools. Data were also obtained from the General Office, Bureau of Public Schools, Manila.

Findings and Interpretations. The average years of preparation of teachers were as follows: those in general high schools, 2.7 years; those in agricultural high schools, 3.0 years; and those in rural high schools, 3.7 years. One per cent of the teachers studied held post-graduate degrees, 57 per cent were college graduates, eight per cent were college undergraduates and two per cent were graduates of agricultural or rural high schools. Five per cent possessed adequate professional training for teaching vocational agriculture and 46 had none.

The efficiency ratings given the teachers by their school administrators were: excellent 15 per cent, above average 62 per cent and average 23 per cent.

An attempt was made to determine the training deficiencies of teachers in the field. This part of the study showed that 44 per cent of the teachers wished to take professional courses in agricultural education, 34 per cent wished to take other courses and 22 per cent were non-commital.

Only 25 per cent of the teachers had earned credits at a college, attended summer school or Saturday classes since employment.

Eighteen per cent of the teachers qualified in the senior teacher examination and 10 per cent in examinations other than those for teaching. Sixty-one per cent had no civil service eligibility of any kind.

The average years of teaching experience by types of high schools were: general, six; agricultural, eight and rural, seven.

12. CUSHMAN, HAROLD R.; GAGNI, ARSENIO O., and JARMIN, MARTIN V. The Agricultural Subject-Matter Needs of Teachers of Agriculture in the Philippines. Research Report, 1959, University of the Philippines. 110 p. Library, U. P. College of Agriculture, College, Laguna.

Purposes. (1) To discover the phases of each farm enterprise in which high school teachers of agriculture need agricultural subject-matter which will assist them in keeping up-to-date with research findings and technological developments. (2) To develop a plan for utilizing available resources to meet the agricultural subject-matter needs of the high school teachers of agriculture.

Method. Questionnaire returns were obtained from 252 principals and teachers in 30 (73 per cent) of the national agricultural schools.

Findings and Interpretations. One hundred and eighty-seven farm jobs involved in 17 agricultural enterprises were arranged in rank order on the basis of the expressed need of teachers for agricultural subject-matter materials. The farm jobs, in which materials were most needed, follow.

Priorities of Teachers' Needs	*Farm Jobs*	*Agricultural Enterprise*
1	Choosing the variety	Rice
2	Securing and selecting seeds	Rice
3	Choosing the variety	Citrus
4	Preparing the seedbed and sowing seeds	Rice
5	Selecting the site	Citrus
6	Securing or buying the planting materials	Citrus
7	Controlling weeds and cultivating	Rice
8	Preparing the land	Rice
9	Selecting the site	Rice
10	Controlling pes's	Rice
11	Fertilizing	Rice

12	Choosing the variety	Mango
13	Irrigating the crop	Rice
14	Pulling and transplanting the seedlings	Rice
15	Preparing the land	Citrus
16	Selecting the breed	Dairy cattle and milking carabao
17	Controlling diseases	Rice
18	Choosing the variety	Corn
19	Feeding the flock	Chicken
20	Choosing the variety	Coffee and cacao
21	"Laying off" the land	Citrus
22	Selecting and buying dairy animals	Dairy cattle and milking carabao
23	Choosing the breed	Chicken
24	Controlling pests and diseases	Citrus
25	Pruning	Citrus
26	Securing and buying planting materials	Mango
27	Choosing the variety	Camote
28	Planting	Citrus
29	Breeding for improvement	Chicken
30	Selecting the site	Mango
31	Housing the flock	Chicken
32	Choosing the variety	Sugar cane
33	Rearing and feeding growing stock	Dairy cattle and milking carabao
34	Selecting and buying seed	Corn
35	Choosing the variety	Cassava
36	Care and feeding of cow at time of calving	Dairy cattle and milking carabao
37	Raising seedlings	Coffee and cacao
38	Cultivating, weeding and fertilizing	Citrus
39	Selecting and preparing the cuttings for planting	Cassava
40	Selecting the site	Corn
41	Growing cabbage	Vegetables
41	Choosing the variety	Coconut
42	Selecting the site	Cassava
43	Selecting and germinating seeds	Coconut
44	Selecting the site	Coffee and cacao
45	Preparing and "laying out" the plantation	Coffee and cacao

46	Choosing the breed	Ducks and geese
47	Selecting the breed	Swine
48	Selecting the cane points	Sugar cane
49	Feeding milking cows	Dairy cattle and milking carabao
50	Growing eggplant	Vegetables

A plan was developed for a cooperative effort by the B.P.S. and the U.P. College of Agriculture to provide an agricultural subject-matter service for teachers of agriculture in the Philippines.

13. DE CASTRO, BEATRIZ A.; ALBALADEJO, MODERNO R., and SAGUIGUIT, GIL F. Elimination of Pupils in the Central and Barrio Schools of Los Baños, Laguna. B.S. Thesis, 1956, College of Agriculture, University of the Philippines. The Philippine Agriculturist 39(10): 599-610.

Purpose. To discover: (1) the extent of elimination, (2) the extent of schooling of dropouts, (3) the reasons why students left school and (4) the occupational interests of elementary school children.

Method. Personal interviews were conducted with 882 children who had been enrolled in the first grade in the central school and three barrio schools of Los Baños. Additional data was obtained from analyses of school records.

Findings and Interpretations. The percentage of students reaching each grade was: second grade, 97; third grade, 94; fourth grade, 87; fifth grade, 72; sixth grade, 48, and graduated, 43. The same percentage of boys and girls were graduated.

Of those who did not graduate, one per cent did not complete first grade, five per cent finished first grade only, five per cent finished grade two before leaving, 12 per cent reached as far as third grade, 26 per cent completed grade four, 42 per cent achieved grade five and nine per cent grade six before leaving.

Financial difficulty, parents' need for help, failing health, laziness, average-in-grade, poor mentality, indifference of parents and sickness of parents were given as main reasons for dropping out of school.

The most popular occupational interests among boys were farming, fishing, military service and poultry raising. The girls expressed interest most frequently in dressmaking, teaching, poultry raising and nursing.

The researchers concluded that the high percentage of elimination in the elementary grades and the narrow range of occupational interests pointed to a need for more adequate elementary school facilities and an educational program that would be profitable to the youth who leaves school at an early age.

14. FACTORA, AGAPITO QUEVEDO. A Critical Examination of the American School System in the Philippine Islands. Dissertation, Ph.D., 1940, University of Southern California. 447 p. Library, University of Southern California, University Avenue, Los Angeles.

Purpose. To present to students of education the story of the development of American educational thought in the Philippine Islands from the beginning of the American occupation of the islands on May 19, 1898 to

November 15, 1935.

Method. The information considered in the preparation of this investigation was obtained through library research. The following books and periodicals were consulted:

(1) Educational Index
(2) Reader's Guide
(3) The Educational Yearbook
(4) The International Yearbook
(5) The Loyola Educational Digest
(6) Public Affair Annual Cumulative Index
(7) International Index to Periodicals
(8) People's Index to Periodical Literature

Careful attention was given to the sources of investigation and the nature of the material collected. Every source from which material was derived was carefully scrutinized, sifted and analyzed. The authorship, date, purpose and actual messages covered by the source used were factors in determining whether the material would be used or discarded. The aim in this study was to present only such data as would convey an honest and authentic picture.

Findings and Interpretations. The philosophy of the American School System in the Philippine Islands was determined in a large measure by the principles of equality and opportunity through education. It was patterned closely after the system in the United States and those of other advanced nations of the world. In fact most of the faculty members in the early years of the American Regime in the Philippines received their training in American colleges and universities.

The Americans brought with them American ideals and democracy. The development of a self-governing people through liberal education became the purpose of the American school system. This theory of education, however, was not original. President Theodore Roosevelt particularly emphasized that it was in line with Dr. Jose Rizal's theory of Popular and Universal Education.

A completely modern American school system at the elementary, secondary and university levels was established by the Filipino-American government. In addition to the public school system, private elementary, secondary and higher schools were instituted. Curricula were continuously revised to meet the local needs and interests of the people. The schools were open to all and through the efforts of these institutions illiteracy was substantially decreased.

The American educational system was judged to be inadequate. Significant changes were very badly needed to meet the local needs and interests of the people. More funds were needed. Vocational guidance was not practiced in all public and private schools in the islands. It was claimed that increasing juvenile delinquency was due to the failure of the public schools to teach formal discipline.

15. GABERTAN, LUZ ESGUERRA. A Study of the Elimination of Pupils in the Central and Barrio Schools of Bay, Laguna. Thesis, B. S., 1955, University of the Philippines. 30 p. Library, U. P. College of Agriculture, College, Laguna.

Purposes. To determine: (1) the extent of elimination of pupils enrolled in the central and barrio schools of Bay, Laguna; (2) the amount of schooling received by pupils who left school, and (3) the educational and occupational interests of in-school and out-of-school children of elementary school age.

Method. Data were obtained from school records and personal interviews with 404 children who had enrolled in first grade. Twenty-two per cent came from the poblacion and 78 per cent from the 14 barrios of Bay and three sitios of Calauan. The most common means of livelihood of the children's parents were farming and fishing.

Thirty-seven per cent of the children who started Grade I graduated. A

higher per cent of pupils who enrolled in schools offering Grades I to VI graduated than those who entered schools offering Grades I to IV. The average age at graduation was 14 years.

The average grade reached by pupils who left school was Grade III. The most common reasons for leaving school were: financial difficulties, help needed by parents and poor health. The pupils who were eliminated before graduation left at an average age of 13 years.

The most common occupational choices of the 50 boys who were still in school were driving, agriculture, engineering, trade and commerce. Of the 29 girls still in school the largest number hoped to be dressmakers, teachers, beauticians and housekeepers

Of the 150 boys who were out of school at the time of the study, 47 were farmers, 12 were coconut pickers, eight were fishermen, four were in merchandizing, four were laborers, three were shoe shiners, one was a butcher and 71 were unemployed. The occupations of the 172 girls who were out-of-school were as follows: 52 housekeepers, three storekeepers, three housegirls, 33 refreshment sellers, two merchandizers and 65 unemployed.

16. GABORNO, VICTORIANO A.; ABELLA, PEDRO, and JULIANO, JORGE P. A Study of the Effectiveness of Plant Science Courses at the Central Luzon Agricultural College Toward Preparing Vocational Agriculture Teachers. Research Report. Central Luzon Agricultural College, Muñoz, Nueva Ecija.

Purpose. To improve the content of plant science courses offered in support of the Agricultural Education Curriculum in the Central Luzon Agricultural College.

Method. Teachers who had taught plant science courses at one time or another and who were either graduates of or had taken plant science courses at CLAC constituted the population for the study. The individuals were interviewed and at the same time asked to complete a questionnaire which would reveal their educational backgrounds, place of employment, teaching experience, farming background and specific cases and examples of weaknesses and strong points in the content of plant science courses offered and taken at CLAC.

Findings and Interpretations. The following facts were obtained in the study:

(1) Fifty per cent of the cooperators were secondary school teachers and the other half were elementary school teachers.

(2) Only 13 per cent of the individuals completed the equivalent of a four-year college education.

(3) The large majority were two-year college graduates.

(4) The plant science subjects taught by the cooperators were: Elementary Agriculture — 10; Horticulture — 22; Agronomy — 14; and Pomology — one.

(5) Only 12 of the 30 cooperators had previous farming experience.

(6) A number of cooperators provided extension education opportunities to adult farmers, young farmers and classroom students.

(7) There was a close coordination between classroom and project activities for the in-school group but somewhat less help was given adult farmers and considerably less to young farmers.

(8) Fifty per cent reported that practically no club activities existed in their respective schools. Not one teacher mentioned the existence of an active F.F.P. Chapter.

(9) A large majority of the teachers indicated that the Agrono-

my, Soils and Pomology laboratory programs did not offer students sufficient opportunity to develop the skills and technical knowledge necessary to teach at the high school level.

(10) Deficiencies of training were reported in soil analysis, fertilization of crops, pest and disease control and identification, farm management and vegetable production.

The following conclusions were made:

(1) The length and type of training given teachers responsible for plant science instruction in the high schools and elementary schools were not adequate for the desired results.

(2) Fairly well developed teaching programs were offered by the cooperators in spite of the deficiencies in their training.

(3) The schools where the cooperators taught were deficient in club activities.

(4) The plant science courses offered were deficient in providing prospective teachers with adequate training in various practical field operations.

(5) The teaching methods employed in plant science needed review and improvement.

17. GERVACIO, EMMANUEL T. Goals and Standards and the Technical Information and Skills in Poultry Production Which Should Be Developed Among Students in Vocational Agriculture in the Philippines. Thesis, M.S. 1957, University of the Philippines. 109 p. Library, U. P. College of Agriculture, College, Laguna.

Purposes. To determine: (1) the goals and standards which should be emphasized in teaching poultry production, (2) the technical information and skills that should be emphasized in teaching poultry production and (3) criteria for use in evaluating the proficiency of students in poultry production.

Method. Questionnaire responses were obtained from 129 teachers and their principals in the national agricultural schools.

Findings and Interpretations. The production goals which teachers and principals believed should be emphasized in teaching poultry production were presented for each of the following types or phases of poultry production: incubation, broiler enterprise, pullet enterprise and the laying flock.

Teachers and principals recommended that the use of the following items of equipment be emphasized in teaching poultry in the agricultural schools: incubator-thermometer, vaccinating equipment, caponizing set, tool storage facilities, lamp brooders, colony brooders, electric brooders, poultry crates, oil stove, egg crates and cartons, vehicles for carting poultry feed and products, hand tools, candlers, battery brooders and incubators.

The keeping of the following records should be emphasized according to the respondents: egg production, cost of production, sales, financial, flock incubation and brooder records.

Items of technical information which should be emphasized in teaching each of the following aspects of poultry production were listed in detail: identification of classes, breeds and varieties of poultry; planning to engage in the poultry enterprise; managing the business end of the poultry enterprise; housing poultry; selection of breeders; breeding and mating breeder; feeding the laying and breeding stock, and using artificial illumination.

The technical skills which teachers and principals believed should be stressed in teaching poultry production were listed in the following categories: housing the laying and breeding stock, feeding the laying and breeding stock, culling, mating the breeders,

hatching eggs artificially, brooding chicks, care of the laying flock, preparing eggs for market, preparing poultry for market, controlling diseases, pests and vices, maintaining production during the wet season, interpreting poultry records and fitting, exhibiting and judging poultry.

Four criteria for evaluating the proficiency of students in poultry production were recommended by teachers and principals:

(1) The continued use of good methods of farming.
(2) Attainment of desirable results in terms of yields per hectare, production per animal, etc.
(3) The understanding of how and why selected practices produce the results obtained.
(4) The choice and use of practices which contribute to the attainment of desirable results.

Teachers and principals placed various methods of determining proficiency of students in poultry production in the following rank order:

(1) Conferences with students and parents for the purpose of determining, cooperatively, the evidence of progress.
(2) Use of performance tests and rating scales.
(3) Surveying use of improved practices used in farming.
(4) Analyzing records of farming programs to determine results in terms of production levels.
(5) Analyzing the kinds of experience secured in farming programs and rating the range and appropriateness of the experience for developing the desired kinds of abilities.
(6) Analyzing plans written by the students.
(7) Using paper and pencil tests.

18. HABITO, CELESTINO P. Development of An Adult Farmer Education Program for the Philippines. Dissertation, Ph.D., 1958, University of Minnesota. 380 p. Library, University of Minnesota, Minneapolis.

Puproses. (1) To prepare suggestions for the development of an adult farmer education program for the Philippines designed to increase the proficiency of Filipino farmers, (2) to prepare suggestions for the pre-service and in-service training of Filipino agriculture teachers designed to provide qualified instructors of adult farmer and (3) to formulate proposals relative to the administration and supervision of an adult farmer education program in the Philippines.

Method. With the use of the most recent available publications and documents relevant to the problem, an extensive review of the various situations currently obtaining in the Philippines pertinent to this study was made. An intensive investigation of the adult farmer education program in the United States was undertaken with the use of available literature. Particular focus was directed on the practices of reportedly successful teachers in the organizing, conducting and evaluating of adult farmer classes.

Findings and Interpretations. Since 1907 the agricultural education program in the Philippines has developed extensively on the elementary, secondary and college levels. However, a tremendous technological lag still hampers the efforts to enhance the development of Philippine agriculture. This situation is reflected in the widespread low average yields of crops and the recurrent shortages in staple foods.

Although the Filipino farmer is now in a position to partake of numerous advantages not available to him only five years ago, there are still a number of serious deterrents residing within both the environment and the farmer himself which adversely influence agricultural development. The environment of the Filipino farmer has improved much during the last five years as a result of a progressively successful community development program.

On the basis of the findings, the following recommendations were made:

(1) a reorientation of the philosophy, objectives and guiding principles of the agricultural education program in the Philippines with a view of giving a heavy emphasis on the vocational agricultural education of adult farmers;
(2) institution of adult farmer instruction in all farming communities as an integral part of the community school's educational program;
(3) a continuous in-service training of agriculture teachers towards effective adult farmer instruction as a joint cooperative undertaking in the training of agriculture teachers;
(4) the use of an advisory council built around the Barrio Council in the organization, conduct and evaluation of agricultural instruction in the community;
(5) the use of the farm management approach in the teaching of adult farmers, and
(6) recognition of the need for utilizing evaluation as a continuous process from the planning stage through the last phase of adult farmer instruction and as a process jointly participated in by the learners, the advisory council, the teacher and other interested community groups.

19. JARMIN, MARTIN V. A Study of Economic and Social Conditions in a Farm Village of Laguna. Thesis, B.S., 1940, College of Agriculture, University of the Philippines. The Philippine Agriculturist 31(1):44-51.

Purpose. To study the economic and social conditions in the barrio of Tranca, municipality of Bay, province of Laguna.

Method. One hundred and fifteen interviews were conducted with heads of family. An interview schedule was used for recording data.

Findings and Interpretations. Farming was the occupation of 88 per cent of household heads. Of the farm operators, 18 per cent were owners, 50 per cent were part-owners and 32 per cent were tenants. The principal types of farming were rice-sugar cane, 28 per cent; rice, 25; coconut, 11; coconut-lanzones, nine; sugar cane, nine and general, 14 per cent. The average investment per farm was ₱1455 of which 55 per cent belonged to the farm operator. The principal kinds of livestock raised were carabao, swine and poultry. The farmers generally employed primitive methods of farming. The amount of annual income available for family living was ₱217 per household or ₱55 per adult male equivalent.

Of the different types of household the husband-wife-children type comprised 49 per cent. The average household consisted of five persons. Only 13 per cent of the male household heads were born in the barrio. Household heads had on the average resided in the barrio for 19 years. The majority, 74 per cent, of the houses had galvanized iron roofing. The rest had cogon roofs. The average value of dwellings was ₱112. Each had 2.5 rooms or 0.5 per person.

The homes had limited facilities and conveniences. None of the homes had any of the following: ice box, water pump, running water, electric light, gas stove, indoor toilet, outdoor sanitary toilet, phonograph, piano or radio. The items commonly found were: bamboo beds, 41 per cent; wooden beds, three; iron beds, two; sewing machines, 13; wooden benches, 49; wooden chairs, nine; iron chairs, four, and water container with faucet, 74 per cent.

There was a schoolhouse made of strong materials in the barrio. The enrollment in the four grades was 103. There were two teachers.

There were 90 children seven to 14 years old in the barrio. Of this number, 51 per cent were not in school.

These children completed an average of 2.6 grades.

Of the 75 children 15 to 23 years of age, only three per cent were in school; 97 per cent had left school. The average grade completed by this group was 3.5.

The number of books per household was one. Although newspapers and magazines were found in several homes, only five per cent were regular subscribers.

20. JARMIN, MARTIN V. Factors to Consider in Determining the Appropriateness of An Institution for Training Teachers of Vocational Agriculture. Thesis, M.S., 1956, Cornell University. 120 p. Library, Cornell University, Ithaca, N.Y.

Purposes. (1) To discover the principles that are presently being employed and which are receiving nationwide acceptance in the training of teachers of vocational agriculture. (2) To determine what factors should be considered in applying these principles to a specific situation in order to determine the appropriateness of the institution for training teachers of vocational agriculture.

Method. Principles presently employed and receiving wide acceptance in training vo-ag teachers, and tentative factors that should be considered in determining the appropriateness of an institution for training teachers of vocational agriculture, insofar as each principle was concerned, were discovered from a review of literature. These were submitted in the form of a questionnaire to a jury of nine experts selected from the U.S. Office of Education and from each of the four regions of the United States for their value judgments.

Findings and Interpretations. The principles declared valid by the jury were:

(1) The institution must own and operate a farm which has crops, livestock (including poultry), farm implements and farm buildings.
(2) The institution must have adequate laboratories for instruction and research in the different science courses it offers.
(3) The college must have appropriate and adequate classrooms available for all classes.
(4) The members of the staff must be provided with adequate offices for private study and individual or group consultations and conferences.
(5) The institution must have a library with adequate facilities and reference materials in agriculture and related sciences available for use of faculty members and students.
(6) The institution must provide for the development of effective skills and abilities in technical agriculture; including farm economics and agricultural engineering.
(7) The institution must make provisions in its curriculum for the development of understanding in the various fields of science and how they affect agriculture.
(8) The institution must provide for the development of understanding in general education, including the humanities, necessary for effective human relations.
(9) The institution must provide training in professional education that will develop skills and abilities necessary for effective teaching of vocational agriculture.
(10) The institution must employ staff members who are competent to teach and do research work in the specific area in which they are employed.

Several factors were identified which should be considered in determining the appropriateness of an institution for training teachers of vocational agri-

culture insofar as each of the principles was concerned.

These factors should be considered in developing standards or criteria for determining the appropriateness of an institution for training teachers of vocational agriculture. These standards or criteria should, in most cases, represent qualitative or quantitative expressions of the factors themselves. They should, for convenience, be arranged in an evaluative instrument together with the principles to which they relate.

21. JUAN, VIRGINIO CASTILLO. The Educational Attainment, Service Status and In-Service Training Needs of Agriculture Teachers in the Philippines. Thesis, M.S., 1955, Pennsylvania State University. 68 p. Library, Pennsylvania State University, University Park.

Purpose. To reveal essential information concerning agricultural teachers and their program needs so that future policies in vocational agriculture and the in-service training activities of the Bureau of Public Schools may be planned accordingly.

Method. Two hundred fifty vocational agriculture teachers employed in 104 schools located in 32 provinces in the Philippines completed a pretested schedule of data including their training, service status, types of instruction important to their areas and preferences for in-service training courses and workshops.

Findings and Interpretations. Only 60 per cent of the teachers were qualified to teach vocational agriculture. They had been graduated from the University of the Philippines with the Bachelor of Science in Agriculture degree. Most of the men had majored or minored in agronomy or animal husbandry. Of the 250 teachers, 55 per cent had been graduated within the past five years.

A majority were not professionally trained to teach. Barely half of them had earned at least six credits in education courses. Forty-six per cent of the teachers had attended in-service classes within the past six years; 30 per cent had attended two-week workshops.

There are consistently high positive correlations (0.87 to 0.97) among the major livestock, major crop and minor crop enterprises important in each locality, their importance in courses taught and their preference rating as subjects to be studied if in-service classes and workshops are held and attended. Poultry and swine were the major livestock enterprises. Rice and corn were the major crops; vegetables and root crops the most important minor enterprises.

An important exception was the low correlation of 0.18 between farm mechanics areas at present important in the localities and their importance as abilities the teachers would like to acquire through in-service training. The area of farm machinery selection, operation and maintenance was the first choice of the teachers for future training followed closely by irrigation and drainage.

The teachers desired instruction in controlling pests and diseases and in soil conservation and fertility management. In professional areas, they wanted classes and workshops dealing with the supervision of school farm projects and individual students' farming programs as well as in organizing learning activities and using improved teaching procedures, materials and aids.

Recommendations were made for higher entrance salaries; a system of teacher certification; close cooperation between the teacher training departments of the agricultural colleges and the Bureau of Public Schools; inducements for teachers to enroll in in-service classes; increased travel funds; teaching aids and subject-matter service from the colleges, and improved skills in agriculture, in teaching, in community leadership, and in public relations.

22. JULIANO, JORGE P. The Technical Training of Teachers of Vocational Agriculture in the Philippines. Thesis, M.S., 1954, Pennsylvania State University. 69 p. Library, Pennsylvania State University, State College.

Purposes. (1) To determine the educational attainments of teachers of vocational agriculture in the Philippines. (2) To determine, on the basis of teacher-designated needs, what phases of technical training in agronomy, horticulture, animal husbandry, farm physics, farm engineering and farm economics need to be emphasized in the teacher education program. (3) To suggest ways of securing technical training in areas of need, and ways of preventing the recurrence of deficiencies in the training of future teachers of vocational agriculture.

Method. The data were obtained through questionnaires sent to 94 teachers of vocational agriculture distributed among 17 national agricultural high schools. The 41 public and private high schools were distributed among 35 provinces scattered throughout the breadth and length of the archipelago.

The technical training was divided into practical skills and activities and factual knowledge and information. Four sources of technical training were identified; namely, the home farm, vocational agriculture classes in high school, college training and experiences while teaching. The teachers were asked to evaluate the technical training in college as very adequate, adequate or inadequate.

Findings and Interpretations. The educational attainments of the 94 teachers ranged from high-school graduates to college of agriculture graduates. Sixty-one or 65 per cent of the teachers possessed a bachelor's degree in agriculture. Thirty-two or 34 per cent had less than a bachelor's degree in agriculture or were graduates of the college of veterinary medicine or the college of education. On the basis of the average number of units completed in college in technical agriculture courses, 67 per cent had adequate technical training.

Teachers received the largest amount of technical training in practical skills and activities in the five subject-matter areas of the high-school agriculture curriculum in college; the second largest amount, while teaching; third in amount, from the home farm, and the least, from vocational agriculture classes in high-school. In factual knowledge and information, teachers acquired most of their knowledge in the five subject-matter areas of the high-school agriculture curriculum from college; second largest amount, from their experience while teaching; third, from the high school, and the least from their home farms.

Many teachers felt they had inadequate technical training in college in farm electricity and farmshop work. There was a slight relationship between the areas in which the teachers felt they had inadequate technical training in college and their present needs More than 40 per cent of the 94 teachers studied felt a need for more training; more experience, and more knowledge in farm machinery and equipment, farm electricity, livestock diseases and parasites, fertility management and conservation and farmshop work.

In-service training, teacher certification, encouragement of promising students to enter the teaching profession and higher compensation for teachers of vocational agriculture were recommended.

23. LOGAN, FELIX B. A Study of the Graduates of Five Agricultural High Schools in Luzon. Thesis, M.Ed., 1958, University of the Philippines. 180 p. Library, College of Education, University of the Philippines, Diliman, Rizal.

Purpose. To study the socio-economic and occupational status of 1946 to 1952 graduates, their employment,

income and wages and attitudes in order to know whether agricultural high schools can bring "more capable human resources" to the farm.

Method. The investigator gathered the names and addresses of 1946 to 1952 graduates from the records of five agricultural high schools in Luzon namely: (1) Lagangilang National Agricultural School, Lagangilang, Abra; (2) Echague Rural High School, Echague, Isabela; (3) San Carlos Rural High School, San Carlos, Pangasinan; (4) Camarines Sur Agricultural High School, Pili, Camarines Sur, and (5) Batac Rural High School, Batac, Ilocos Norte. Questionnaires were mailed to the graduates. Returns of 45 per cent were obtained.

Findings and Interpretations. The principal occupation of the parents of the graduates was farming; some of them were farm laborers. Only 11 per cent were professional workers.

Of the 453 respondents, 11 per cent were independent farmers and businessmen; four per cent, tenants and part-owners of land; 15 per cent, employed, full- and part-time; 49 per cent, student, and 18 per cent had no employment.

The changes of occupational status from time of graduation to the time of the study were as follows: independent farmers and businessmen, an increase of three per cent; tenants and part-owners of land, a decrease of 0.2 per cent; employed full and part-time, dropped by 11 per cent, students and professionals, a gain of four per cent; unemployed and not studying, an increase of five per cent.

The average monthly income and wages had increased. Income before graduation was ₱46.00; a year after graduation, ₱75.00, and at the time of study, ₱88.00.

Forty-five per cent of the graduates read newspapers and magazines, 60 per cent were affiliated with associations and organizations and eight per cent were members of insurance systems.

These were the recommendations: (1) jobs should be created for graduates or they should be given five hectares of land on which to begin farming. (2) Graduates might be resettled in sparsely populated regions of Mindoro, Palawan and Mindanao. (3) Unemployed graduates should be trained to disseminate information concerning intensive farming, crop diversification and other farming practices. (4) Farm credit should be extended to those who are already established in farming so that they can improve their projects. (5) Organizations for agricultural high school graduates should be formed. (6) Further studies should be made on the holding power of agricultural high schools, upgrading farm production and increasing farm crops and the farm income of the community through fuller use of the agricultural high schools.

24. MAGTIRAS, CIRILO C. A Study cn Vocational Choices of High School Seniors. Non-Thesis Study, 1936, University of the Philippines. Philippine Journal of Education 19:9. February 1937. p. 704-706.

Purpose. To find out how the 1936 graduates of the U.P. High School were distributed in the various vocations.

Method. Questionnaires were distributed to 96 seniors of whom 92 responded.

Findings and Interpretations. Of the 92 seniors who responded, 23 were girls and 69 were boys. The average age of the group was 17 years. They came from various parts of the Philippines and were children of parents from 24 different walks of life. They had sufficient financial means to continue their studies.

Thirty-two per cent of the seniors were yet undecided as to what course to take up after graduation even though they had decided to continue their studies. Thirty-six per cent were

attracted to highly professional courses such as law, medicine, engineering, etc. Vocational courses (industrial, commercial and agricultural) were not popular among the group studied; only 14 per cent selected these fields. With the types of students who enter the U.P. High School, the writer doubted whether emphasis on training for these occupations could be justified. Sixteen per cent planned to go into public service jobs like teaching, aviation, military, etc. Only 11 per cent of the seniors were inclined to follow the professions of their parents.

The fact that 32 per cent of the seniors were still undecided as to the course they would take up showed that vocational counseling was being neglected by the school. Those who had not decided on their vocation needed guidance. Likewise, those who were influenced by parents' choices needed guidance also.

25. MANGAOIL, JUAN C. A Survey of the Home and Community Conditions in the Barrio of Piña, Gattaran, Cagayan, as a Basis for Planning a Rural Improvement Program. Thesis, B.S., 1957, University of the Philippines. 50 p. Library, U. P. College of Agriculture, College, Laguna.

Purpose. The survey of home and community conditions was conducted for use as a basis for planning a rural community improvement program in the barrio of Piña, municipality of Gattaran, Cagayan province.

Method. The survey included 100 households in the barrio. The data was gathered through personal interviews. The data was recorded on interview schedules and was also secured from the various records on file in the municipality.

Findings and Interpretations.

(1) Most of the houses had bamboo walls, wooden floors and cogon roofs; only 11 houses had G.I. roofing. The average value of dwellings was ₱457. There was a tendency for dwellings to be constructed in a more permanent set-up and to be valued more as the family received higher education. The floor area of a dwelling was 31 square meters, or 6.5 square meters to a person.

(2) The facilities and conveniences in the house were inadequate. Only 10 homes drew water from artesian wells; the rest got their water supply from the creek.

(3) The average household had five members.

(4) The average length of the family head's residence in the barrio of Piña was 32 years. More than one-half of 57 per cent of the heads of families were born in other provinces. The average age of the husbands was 42 years; wives, 39 years; sons, 13 years, and daughters, 14 years.

(5) The most common reading material found in the homes was *Banawag*. The *Bible* was the only book, outside of textbooks, that was found in most homes.

(6) Out of the out-of-school children six to 26 years old, both boys and girls completed an average grade of 4.3.

(7) The average age at marriage of the husbands was 23 years, wives 18 years. Education seemed to have a delaying effect on the age at marriage of both male and female.

(8) Eighty-seven per cent of the husbands and 85 per cent of the wives were engaged in farming.

(9) The estimated average annual income of the family was ₱773, which was considered insufficient to support the family. The higher the educational attainment of the member of the family, the higher was the income.

(10) The outstanding social activity undertaken in the barrio was putting up a barrio school. Highest in popularity were community sanitation and home beautification.

(11) The most common recreational activities of the family were chatting, attending fiestas and parties, visiting neighbors, going to the movies and playing ball.

(12) Eighty-nine per cent of the heads of the family were members of the Piña Adult Organization. Very few young people belonged to local school and community organizations. Only five wives belonged to an organization.

(13) There were more non-Roman Catholics in the barrio than Roman Catholics. Forty per cent of the heads had close kin. Only two families had no kin in the barrio.

(14) Of the 100 families in the barrio, only 16 had intentions of moving elsewhere.

(15) Only 16 heads of families were not in favor of educating their children.

(16) This survey revealed the homogeneous nature of the population of Piña.

(17) All the family heads expressed their willingness to cooperate in any project that was good for the barrio, especially school projects.

Like other types of rural communities in the Philippines, barrio Piña has still much room for social and economic improvement. To increase the income of the families and to raise their standard of living, it is necessary that the people of barrio Piña be taught a better way of life through self-help.

26. MATELA, ARCADIO G. Content of Curricula for Teachers of Vocational Agriculture in Separate Land-Grant Colleges. Thesis, M.S., 1948, Iowa State College. 124 p. Library, Iowa State College, Ames.

Purposes. To ascertain the relative importance of technical agriculture, science, professional education, the humanities and other required content in the undergraduate curricula for teachers of vocational agriculture; and to determine the relationship between the relative importance of the areas of instruction as shown by the proportion of credits required and certain characteristics of the land-grant colleges.

Method. Institutional catalogs of the 22 separate land-grant colleges were the major sources of data.

Findings and Interpretations. The average relative importance of the different major areas of the curricula for the preparation of teachers of vocational agriculture was as follows: technical agriculture, 38 per cent; science, 24 per cent; professional education, 14 per cent; the humanities, nine per cent; other required content, six per cent; and electives, nine per cent. The distribution of the average importance of subject-matter areas in professional education was as follows: general education, 20 per cent; agricultural education, 58 per cent, and psychology, 22 per cent. The distribution of the average relative importance of subject-matter areas in technical agriculture was as follows: agricultural engineering, 18 per cent; agronomy, 21 per cent; animal husbandry, 31 per cent; farm management, 11 per cent; horticulture, 10 per cent, and other agriculture, nine per cent.

27. MEESUKH, CHAN; SHRIBHIBHADHNA, PRAVES, and SACAY, FRANCISCO M. A Comparative Study of Certain Characteristics of First Year Students in Agricultural, Rural and

Academic High Schools. 1948, College of Agriculture, University of the Philippines. The Philippine Agriculturist 31:305-310.

Purpose. To determine the vocational interests, occupations of parents and recreational preferences of students entering the agricultural, rural and academic high schools.

Method. The study included 2,551 first year students who were enrolled in 36 high schools in nine provinces during the 1940-41 school year and distributed as follows: 585 first year students in agricultural high schools, 655 attending rural high schools and 774 attending academic high schools.

Questionnaires prepared by the investigators were sent to the principals who were requested to have students in two typical sections of the first year fill them out.

Findings and Interpretations. The majority of the first year students in the agricultural high schools were from barrios. In the academic high schools a greater proportion came from the town.

The students in the agricultural and rural high schools were in a majority of cases children of farm owners. In the academic high schools only 35 per cent of the students were farmers' children.

About 80 per cent of the male students surveyed in the agricultural high schools and 71 per cent in the rural high schools said that they had selected farming as their future occupations. Only 21 per cent of the beginning students in academic high schools had selected farming as a career.

Of farmers' children enrolled in the first year of agricultural and rural high schools more than three-fourths selected farming as their future occupation. Of farmers' children who entered the academic high schools only 35 per cent intended to farm.

The most popular recreational activity of students in all types of schools was reading. Group games and athletics were also frequently mentioned.

28. MENDOZA, ALMA C. A Study of Seventh Grade Graduates in Santa, Sinait, Santa Catalina and Caoayan, Ilocos Sur with Special Reference to Their Educational and Occupational Pursuits. Thesis, B.S., 1947, University of the Philippines. 39 p. Library, U. P. College of Agriculture, College, Laguna.

Purposes. To determine: (1) the educational attainment, occupational pursuits and income of the seventh grade graduates included in the study, and (2) the occupations of parents of the graduates of the seventh grade in the school studied.

Method. A total of 426 graduates of the seventh grade was interviewed. Data were recorded on an interview schedule. School records were also used to obtain certain types of information.

Findings and Interpretations. Of the 426 seventh grade graduates studied, 73 per cent reached high school, 50 per cent graduated, 26 per cent entered college and seven per cent graduated from a four-year college. The most common vocational courses taken by the students in high school were horticulture, poultry, swine, stenographic-typing and woodworking. Forty-nine per cent took vocational courses. Of those who enrolled in junior colleges 89 per cent studied teaching, nine per cent secretarial work and two per cent arts and trades. The most common courses taken in four-year colleges were education, liberal arts, engineering, law, pharmacy and medicine.

During the year 1946-47, twenty-four per cent of the boys were farmers, 18 per cent were clerks, two per cent were laborers, seven per cent were merchants, six per cent were soldiers, six per cent were fishermen

and the rest were divided among 27 other occupations with less than five per cent engaged in each. The girls during the same year were engaged in the following occupations: 33 per cent housekeepers, 29 per cent teachers, 10 per cent dressmakers, nine per cent merchants, six per cent beauticians; the rest were divided among nine other occupations with less than five per cent engaged in each. This study also showed that the sooner a boy dropped out of school the more likely he was to be a farmer. The sooner a girl dropped out of school the more likely it was that she would become a housekeeper. The average age at time of entrance upon the first occupation was 19 years. More than half found employment in their home towns. The average annual income was ₱768.94.

The occupations of the parents of the 426 graduates were as follows: 33 per cent farmers, 17 per cent merchants, 11 per cent fishermen, nine per cent laborers, eight per cent teachers, four per cent clerks; the other 18 per cent were distributed among 34 other occupations.

29. MENDOZA, IRENEO B. Cooperative Activities of Students in the Agricultural Schools of the Philippines. Report, M.S., 1956, Oklahoma Agricultural and Mechanical College. 71 p. Department of Agricultural Education, Oklahoma Agricultural and Mechanical College, Stillwater.

Purpose. To develop suggestions for teaching the successful management of cooperatives in agricultural schools in the Philippines.

Method. A questionnaire was developed and mailed to agricultural schools in the Philippines. The questionnaire called for information on the nature and extent of cooperative activities engaged in by students, teachers and employees. Completed survey forms were received from 25 schools comprising 62 per cent of the schools currently in operation. The results were analyzed, conclusions drawn and recommendations made including suggested teaching units.

Findings and Interpretations. Sixty per cent of the schools reporting indicated the presence of cooperatives, which are mostly consumers' cooperative associations. The membership consisted of both students and teachers, as well as some farm employees. Students held offices, functioned as members of the board of directors and engaged in various activities pertaining to the cooperative associations. A majority of the student farmers carried out cooperative activities. Forty-four per cent of the schools reported that units of instruction on the operation and management of cooperatives were included in courses of agriculture. The report included: suggested approaches, methods to be used and useful information for teaching successful management of cooperatives.

30. MOLLAH, YAKUB ALI. A Study of the Revised Secondary Agricultural Curriculum in the Philippines. Thesis, M.S., 1958, University of the Philippines. 94 p. Library, U. P. College of Agriculture, College, Laguna.

Purposes. To determine: (1) the principles upon which the curriculum was based, (2) the problems connected with the implementation and continuous improvement of the curriculum and (3) a working guide for the construction of a curriculum in Pakistan.

Method. Interviews were held with supervisors, teachers and students. Printed materials such as books, magazines, mimeographs, reports and typewritten materials belonging to resource persons were studied. Questionnaires were utilized to obtain detailed information from teachers and supervisors.

Findings and Interpretations. The following principles were cited as the bases for the revised curriculum:

(1) The curriculum was designed to assist in the development and utilization of agricultural resources.
(2) It was flexible, functional and practical.
(3) It served both students preparing for farming and those preparing for college.
(4) The curriculum provided for training in production, processing and marketing of agricultural products.
(5) It provided for training in leadership, community improvement, conservation of natural resources and the dignity of labor.

The following procedures were considered vital in the implementation of the curriculum.

(1) All students in vocational agriculture became members of the Future Farmers of the Philippines.
(2) A variety of techniques of teaching was used in conducting instruction in vocational agriculture.
(3) Challenging and well-supervised farming programs at home and in the school were emphasized.
(4) The field work or practicum phase of agricultural instruction was coordinated with classroom instruction and devoted to the school projects and individual projects of the students.
(5) Instruction was given in seasonal sequence.
(6) Both academic and agricultural subjects were scheduled for double periods.
(7) Farm mechanics was integrated with agricultural subjects.
(8) All vocational teachers assisted in field work supervision.

Recommendations were also made concerning the construction and implementation of an agricultural curriculum for the secondary schools of Pakistan.

31. NAANEP, FLORENDO R. and SACAY, FRANCISCO M. A Study of Farm, Home and Community Conditions in a Farm Village of Ilocos Norte as a Basis for Formulating a Program of Rural Education. 1940, College of Agriculture, University of the Philippines. The Philippine Agriculturist 29:555-570.

Purpose. To study farming conditions, home conditions and community conditions in the barrio of Nagbacalan, municipality of Batac, province of Ilocos Norte.

Method. Data were collected by means of personal interviews with the 136 families in the barrio.

Findings and Interpretations. Farming was the occupation of 92 per cent of the 136 heads of households. The percentage of farm owners was 49; part-owners, 41; and tenants, two. Ninety-eight per cent of the farms were rice farms. The average investment per farm was ₱835.60 of which 89 per cent belonged to farm operators. The amount of annual income available for family living was ₱293.59 per household or ₱68.60 for each adult equivalent. The farming methods employed were generally primitive.

The average household consisted of five persons. Seventy-two per cent of the household heads were born in the barrio. Eighty-three per cent of the houses had cogon roofs and bamboo walls and floors. The average value per house was ₱136.08. It had three rooms with a total area of 49 square meters or roughly ten square meters per person. None of the homes had running water or electricity. Little attention was given to home beautification. Fifty-eight per cent of the farm homes had no books but newspapers or magazines were found in 55 per cent of the homes. However, only 19 per cent of the homes got copies of such publications regularly.

Sixty-two per cent of the children from seven to 14 years of age were in school. Ninety-five per cent of the

youth from 15 to 24 years of age were out of school. The average schooling of the out-of-school group from 15 to 24 years of age was 3.5 grades. Seventy-two per cent of the households of the 136 belonged to a Parent-Teacher Association and one, to the Boy Scouts.

32. NOSCAL, SIMPLICIA V. A Study of the Young Farmers and Their Problems in Getting Established in Farming in the Municipality of Lopez, Province of Quezon. Thesis, M.S., 1957, University of the Philippines. 73 p. Library, U. P. College of Agriculture, College, Laguna.

Purposes. (1) To ascertain the characteristics, goals and problems of the young farmers. (2) To find out how the young farmers established themselves in farming.

Method. Two hundred and fifty young farmers in 25 barrios were selected by lot and interviewed. Data were recorded on an interview schedule.

Findings and Interpretations. The typical young farmer interviewed was 24 years old, had been married for three years, resided in the barrio where he was born, had been engaged in farming for eight years, had completed six grades in school, was a part-owner or tenant, did not belong to any organization and engaged in various social and recreational activities such as dancing, singing, fishing, drinking, basketball, volleyball, checkers and cards. All of the young farmers grew both upland and lowland rice but less than one per cent devoted land to pasture. The farms of owner-operators averaged 3.5 hectares; tenants, 3.7 hectares, and part-owners, 4.6 hectares. The livestock of each young farmer usually consisted of a work carabao, a pig and a number of chickens. Ninety-seven per cent owned bolos, 87 per cent owned plows and 86 per cent had harrows and *yatabs*. Less than 50 per cent owned hoes, rakes, hammers, hatchets, spades, forks, chisels or saws. Fifty-five per cent of the young farmers owned a house. The average annual cash income of the young farmers was ₱633.20.

The young farmer's goals in getting established in farming were: to earn money, to establish a home and to improve the home farm.

The major problems encountered by the young farmers in attempting to get established in farming were: difficulty in obtaining capital which was aggravated by low income and unwillingness to borrow at high interest rates, scarcity of good foundation stock, scarcity of land, lack of roads to take produce to market and lack of management skills.

Of the 250 young farmers, six per cent were owners, 40 per cent were part-owners and 54 per cent were tenants. The steps being followed by most of the young men in becoming established in farming were: (1) to help out parents on the home farm; (2) to assume increasing responsibility on the home farm, and (3) to obtain capital, work animals, fertilizer and buildings through the help of parents and other close relatives.

It was concluded that the young farmers drastically needed better credit facilities, better management skills, larger farms, better roads and a program of education that would help them solve the problems they encounter in getting established in farming.

33. PACLIBAR, JOSUE P. A Study of Former Students of the Roxas Memorial Agricultural School in Guinobatan, Albay with Special Reference to Their Educational and Occupational Pursuits. Thesis, B.S., 1956, University of the Philippines. 16 p. Library, U.P. College of Agriculture, College, Laguna.

Purposes. The principal objects of this investigation were to determine: (1) the personal data of former stu-

dents in the Roxas Memorial Agricultural School, such as the kind of districts from which they were drawn, their pre-vocational experiences and the occupational groups to which their parents belonged; (2) persistence of school and educational attainment, and (3) occupational pursuits and income after leaving school.

Method. This study included 200 students who were selected systematically from among the students who enrolled in the first year in the Roxas Memorial Agricultural School during the academic years 1946-47, 1947-48 and 1948-49. School records were re-examined to gather the necessary data. Additional information was secured by personal interview. Questionnaires were used in recording the data. In certain cases when individuals could not be contacted personally, data were secured by correspondence and inquiry among their parents and neighbors.

Findings and Interpretations.

(1) Of the 200 former students of the Roxas Memorial Agricultural School, 50 per cent came from the poblacion and 43 per cent from the farming barrios. Only five per cent came from industrial and fishing barrios.

(2) The average age of the boys and girls at the time of enrollment was 18 years.

(3) Almost one-half of the students were children of farmers. The fathers of the other students were laborers, businessmen, policemen, butchers, drivers and surveyors.

(4) The pre-vocational experiences reported by the boys before entering the rural school were gardening and industrial arts, while the girls reported home economics.

(5) Of the 200 students, 168 or 84 per cent graduated from the high school. Four females and one male finished four-year college courses.

(6) Of the 39 students who pursued college education, 37 per cent took the normal course. The popular courses taken by the males were: agriculture, commerce, dentistry, engineering, law and forestry. Among the females, the popular courses were: normal education, commerce, agriculture, liberal arts, nursing and secretarial.

(7) The average age when the males entered their occupation was at 23 and the females at 22.

(8) Teaching (16 per cent) and dressmaking (14 per cent) were the popular occupations pursued by the females. One-fourth of the females became housewives. Among the males, the popular occupations were: military service, 16 per cent; farming, 14 per cent; working on daily wages, 10 per cent, and business, seven per cent.

(9) The majority of the former students pursued their business in their home towns. Seventeen per cent of the former students had jobs in the cities.

(10) The average annual income of the 160 former students amounted to ₱1077. The average annual income of the females was slightly higher than the males.

(11) About 25 per cent of the former students had already married at the time of the survey. The average age at marriage was 28 years.

(1) After marriage, only nine per cent of the former students owned their homes, 84 per cent lived in homes owned by their parents and the rest rented their homes.

34. PALIS, FELICITAS V. The Objectives and the Necessary Information and Skills in Swine Production Which Should Be Developed Among Students in

Vocational Agriculture. Thesis, M.S., 1958, University of the Philippines. 83 p. Library, U. P. College of Agriculture, College, Laguna.

Purpose. To determine the goals and skills that should be emphasized in teaching swine production.

Method. Questionnaire responses were received from 50 per cent of the principals and teachers in the national agricultural schools.

Findings and Interpretations. The following goals were recommended for emphasis in teaching swine production:

Number of pigs farrowed per litter — eight

Average number of pigs weaned — six

Weight of market pigs produced per sow — 270 kilos

Weight of pigs at 56 days — seven kilos

Amount of feed used per kilo of pork — two kilos

Average weight of pork per sow at six months — 180 kilos

Amount of labor per 45 kilos of hogs produced — ₱8.00

The use of the following equipment was recommended for emphasis in teaching swine: vaccination outfit, pails, carpentry tools for repair and maintenance, farm tools for tillage of the soil, water tank, emasculator, ear notcher, feeding floor, hog holder, hog crate, vehicle for carrying feeds and marketing hogs, breeding stall and ropes, post-mortem set, equipment racks, hog bit and deworming equipment, scales and tripod, chute, brush, barrel on skids, hoof clipper and rasp and tattoo marker.

The major problems encountered by the teachers and principals in swine production were: overlaid animals, injuries, crushing, worm infestation, low percentage of weanlings, insufficient milk, pneumonia and colds, wasting of feed, necrotic enteritis, scours, inverted teats, sow cannibalism, weaklings, flies and starvation.

The skills and information which should be emphasized in teaching swine production, marketing and utilization were listed in detail.

35. PASCUAL, PLACIDA S. A Study of Former Students of the Rural High School in Bayombong, Nueva Vizcaya, with Special Reference to Their Educational and Occupational Pursuits. Thesis, B.S., 1956, University of the Philippines. 16 p. Library, U. P. College of Agriculture, College, Laguna.

Purposes. This study was conducted to determine the effectiveness of the revised secondary agricultural curriculum, which took effect in 1946, through an analysis of: (1) the personal data of former students in the Nueva Vizcaya Rural High School, including the districts from which they were drawn and the occupational group to which their parents belonged; (2) persistence in high school and educational attainment, and (3) occupational pursuits and income after leaving school.

Method. Two hundred randomly selected students who enrolled in the first year in the Nueva Vizcaya Rural High School during the academic years 1946-1947, 1947-1948 and 1948-1949 were sent questionnaires prepared in the Department of Agricultural Education. The school records of the students were examined and the pertinent data gathered. Additional information was obtained by personal interviews with the students. In certain cases in which the students could not be contacted personally, data were secured by correspondence and through inquiry from the students' parents and neighbors.

Findings and Interpretations.

(1) The average age of the 200 former students of the Nueva Vizcaya Rural High School at the time of enrollment was 17 years.

(2) Twenty-six per cent of the students came from the poblacion; 72 per cent, from the farming barrios, and two per cent, from the industrial and fishing barrios.

(3) One-fourth of the students were children of farmers. The rest were children of laborers, businessmen, mechanics, butchers, drivers, teachers, carpenters, clerks, foremen and others.

(4) Gardening and industrial arts were the pre-vocational experiences of the boys before they entered the high school. The girls reported home economics as their pre-vocational experience.

(5) Sixty-four per cent of the former students graduated from the high school. Only four males and one female finished four-year college courses.

(6) Of the 73 students who entered college, 22 per cent studied commerce. The popular courses among the males were agriculture, farm mechanics, secretarial science, mechanical engineering and commerce. Among the females the popular courses were normal, commerce, home economics, education, agriculture, nursing, religious education, secretarial science and home technology.

(7) The average age when the males took up their occupation was 22 years; the females, 20 years.

(8) Farming was the most common occupation of the former male students and was chosen by 26 per cent of them. Other occupations chosen were (in percentage): soldier, 16; student, 16; driver, 13; mechanic, six; business, three; government employee, three; laborer, three; clerk, two; sprayer, two, and others, 10.

The occupations of former female students were (in percentage): housekeeper, 34; student, 17; dependent, 13; dressmaker, 10; clerk, eight; teacher, seven; beautician, three, and others, eight.

(9) Most of the former students pursued their occupations in their hometowns; one-fourth worked in other communities in the province. Only four per cent had jobs in the cities and one per cent outside the Philippines.

(10) The average annual income of 119 former students amounted to ₱1109. The males had a slightly higher average annual income than the females. In the male group, high incomes were reported by the U.S. navy personnel, the veterans, the teachers, the assistant manager of a printing press, the farm manager and a few farmers.

(11) Almost one-third of the former students had already married at the time of the survey. The average age at marriage was 22 years.

(12) Seventy per cent of the married students owned their homes. Six per cent lived in rented houses; 11 per cent, in homes owned by their parents, and the rest, in army or navy camps.

36. RAMOS, REYNALDA C. A Study of the Occupational and Educational Situations, Problems and Interests of the Youths in Five Barrios of Calamba, Laguna. Thesis, B.S., 1953, University of the Philippines. 41 p. Library, U. P. College of Agriculture, College, Laguna.

Purpose. To determine the occupational and educational situations, problems and interests of young people in Calamba, Laguna.

Method. One hundred and fifty young men and 15 young women, ranging in age from 15 to 24 years, were interviewed.

Findings and Interpretations. The majority of the youths were born in the barrio where they were residing at the time of the survey. The occupations of the parents of the 300 interviewees were divided as follows: 36 per cent, farmers; 11 per cent, fishermen; six per cent, laborers; the rest were engaged in 35 other occupations. Sixteen per cent of the youths were married. On the average the boys had married at 21 years of age and the girls at 18.

Thirty-four per cent of the youths were in school. The most common reasons given for leaving school were financial difficulty and need of their help in supporting the family. Out-of-school youth averaged five years of schooling. Only 27 per cent of the youth had vocational training, the most important of which were stenography-typewriting and poultry and swine raising by the boys and embroidery, handicraft and dressmaking by the girls.

At the time of the survey the most common occupations of the boys were students, farmers and laborers. The girls were most frequently engaged as housekeepers, laborers, students, dressmakers, farm workers and vendors. The average annual income was ₱1,043.97 for boys and ₱790.55 for girls.

Vernacular publications, such as *Liwayway, Bulaklak* and comic magazines were the most popular reading matter; but only ten per cent subscribed to any publication. The most common social organizations were those associated with the school. The most popular recreational activities reported were going to movies, reading, dancing, swimming and loafing.

The problems cited most frequently by the youth were: how to continue their studies, financial difficulties, boy-girl relationship and getting a job.

The researcher concluded that a special program for out-of-school youth providing service in the areas of vocational education guidance was needed in the Calamba area.

37. REMETIR, MACARIO F. A Study of Former Students of the Camarines Sur Agricultural High School in Pili, Camarines Sur, with Special Reference to Their Educational and Occupational Pursuits. Thesis, B.S., 1956, University of the Philippines. 19 p. Library, U. P. College of Agriculture, College, Laguna.

Purposes: To determine: (1) the personal data of former students in the Camarines Sur Agricultural High School, (2) the persistence in school and educational attainment of students and (3) the occupations and incomes of former students.

Method. Two hundred students were selected at random among the students enrolled in the first year in the Camarines Sur Agricultural High School during the school years 1946-1947, 1947-1948 and 1948-1949. Their school records were examined for the necessary data. Additional information was secured by personal interview. In certain cases, when individuals could not be contacted personally, correspondence with an inquiry from local public officials, their neighbors, parents and relatives provided the data.

Findings and Interpretations.

(1) The average age of the former students at the time of enrollment was 19 years.

(2) Fifty-seven per cent of the 200 former students of the Camarines Sur Agricultural High School came from the farming barrios, 36 per cent from the poblacion and seven per cent from the fishing barrios.

(3) More than half of the parents of the students were farmers. The rest were teachers, fishermen, merchants, employees, proprietors and blacksmiths.

(4) The boys reported gardening and industrial arts, and the girls home economics and gardening as their most common pre-vocational experiences. These experiences were part of their elementary education.

(5) Of the 200 former students, 122 or 61 per cent graduated from the agricultural high school. Only three males and two females finished four-year college courses.

(6) The popular college courses taken by the males were commerce, agriculture, law and education. Few students chose normal, aeronautics, engineering and veterinary medicine.

(7) The students started their occupation at the average age of 24.

(8) Fifty-two per cent of the former male students were engaged in agricultural pursuits; 24 per cent as farmers, 12 per cent as farm helpers, 12 per cent as farm laborers and four per cent as farm managers. Other occupations engaged in by former male students were: bus conductor, seven per cent; miner, seven per cent; soldier, four per cent; teacher, three per cent; store-owner, two per cent; bus operator, two per cent, and twenty other occupations, 16 per cent.

Twenty per cent of the former female students reported agricultural pursuits: 10 per cent as farm helpers, six per cent as poultry raisers, two per cent as farmers and two per cent as rice planters. Thirty-one per cent of the former female students were housekeepers, 10 per cent salesgirls, eight per cent teachers, eight per cent store-owners, six per cent dressmakers and six per cent beauticians. The other 11 per cent were clerks, employees, embroidery makers, librarians or bridge toll collectors.

(9) The majority of the former students pursued their business in their home towns. Four per cent had jobs in cities and three per cent in communities of other provinces.

(10) The annual income of 168 former students averaged ₱1529. The males had higher incomes than the females.

(11) About 50 per cent of the former students were married at the time of the survey. The average age at marriage was 25 years.

(12) Fifty-one per cent of the former students owned their homes, 28 per cent lived in their parents' homes and the rest rented their homes.

38. ROSARIO, CANDIDO V. A Study of Dropouts and Placement of Graduates of the Nueva Vizcaya National Agricultural School from 1947 to 1958. Non-Thesis Study, 1958, Nueva Vizcaya National Agricultural School. 18 p. Library, Bureau of Public Schools, Manila.

Purposes. To determine the causes and extent of dropouts, to discover the occupations pursued by graduates and to suggest ways and means of selecting and advising students.

Method. An analysis of records available in the principal's office was made. Personal interviews were conducted with former students, their parents and friends.

Findings and Interpretations. Of a total of 1,033 freshmen admitted over an eight-year period, 275 or 27 per cent graduated. The causes given for dropping out of school by the 630 dropouts studied were: poverty, 50 per cent; poor health, 13 per cent; lack of interest, 12 per cent; educational benefits expired or revoked, eight per cent; transferred to other schools, five per cent; and marriage, five per cent. Fewer than five per cent listed each

of the following reasons for dropping out of school: change of residence, seeking employment, misconduct, joined army or navy, poor scholarship or death.

The occupations of 150 graduates studied were as follows: farming, 35 per cent; housekeeping, 14 per cent; continued taking of vocational courses, 13 per cent; elementary school teaching, seven per cent; continued taking of academic courses, six per cent, and vocational agriculture teachers, five per cent. The remaining 20 per cent were employed in 13 other occupations.

Recommendations concerning the selection and advising of students were made by the author on the basis of his experience as a teacher in agricultural schools.

39. SACAY, FRANCISCO M. A Study of the Agriculture of the Philippines as a Basis for Building a Program of Agricultural Education. Thesis, M.S., 1930, Cornell University. Pp. 236. Library, Cornell University, Ithaca, N.Y.

Purpose. To make an analysis of present status and past trends of the agriculture of the Philippines and point out the implications of the agricultural conditions for a program of agricultural education.

Method. Data were secured from published reports, such as census reports, bulletins of the Bureau of Commerce and Industry and the Bureau of Agriculture. The data were classified and summarized by means of tables and graphs.

Findings and Interpretations. The agricultural conditions of the Philippines were described in detail, including regional variations. It was concluded that the Philippines is essentially an agricultural country and that agricultural education should be of paramount importance. It was also emphasized that the form and content of agricultural education should vary according to the agricultural activities of the region in which the instruction was given. In addition, suggestions were made in regard to what might well be the functions of the elementary schools, the secondary schools and the college with respect to agricultural education.

40. SACAY, FRANCISCO M. A Survey and Evaluation of Vocational Education in Agriculture in the Philippines. Thesis, Ph.D., 1931, Cornell University. Pp. 460. Library, Cornell University, Ithaca, N.Y.

Purpose. To survey existing facilities for vocational education in agriculture in the Philippines, to evaluate their effectiveness with a view of discovering weaknesses and to pointing out the direction in which improvements may be made.

Method. Data were secured, classified and interpreted in regard to various aspects of education and agencies of education, and in regard to agriculture and to the socio-economic status of the farming population. These data were secured from reports of Government bureaus and questionnaires sent to principals, teachers and pupils.

Findings and Interpretations. It was concluded that the development of agricultural resources was essential to the welfare of the people; that there was a great need for agricultural education; that the facilities at the time of the study were meager and inadequate, and that those actually engaged in farming should receive assistance from agencies of agricultural education. In addition, suggestions were made with regard to improving the effectiveness of vocational education in the public schools.

41. SACAY, FRANCISCO M. A Study of Teachers of Vocational Agriculture in the Philippines. Non-Thesis Study, 1932, College of Agriculture, University

of the Philippines. The Philippine Agriculturist 23:98-110.

Purpose. To discover the characteristics, technical training, professional training and teaching experience of teachers of agriculture in the Philippines.

Method. Data were obtained from questionnaire responses received from 74 teachers of agricultural and related subjects at the secondary level. Fifteen of the teachers also taught intermediate agriculture.

Findings and Interpretations. The median age of the teachers studied was 30 years. Seventy-two of the 74 teachers possessed technical training in agriculture but only 61 or 82 per cent were college graduates. Seventy-two of the 74 teachers had acquired farm experience before they became teachers, usually on the home farm or on a school farm or both.

Twenty-eight per cent of the teachers were teaching in their home province.

Eighty-one per cent of the teachers had no formal professional training of any kind for teaching. Only five per cent were adequately trained in agricultural or general education.

The median teaching experience in agriculture of the teachers studied was three years.

The majority of teachers were teaching two or three subjects.

It was concluded that in-service training was badly needed by teachers of agriculture. It was recommended that maximum use be made of summer session opportunities for in-service training at the U. P. College of Agriculture.

42. SACAY, FRANCISCO M. A Preliminary Study of Pupils in Vocational Agriculture. Non-Thesis Study, 1933, College of Agriculture, University of the Philippines. The Philippine Agriculturist 22:165-171.

Purpose. To discover certain characteristics of the student population in schools of agriculture of secondary grade.

Method. Data were obtained by means of questionnaires administered to pupils by teachers who were requested to help the Department of Agricultural Education in gathering the desired facts.

Findings and Interpretations. The patronage area of the rural high school was found to be local in nature. The agricultural high school served a wider area than the rural high school since boarding and rooming facilities were commonly provided in the case of the former.

The median age of first year pupils was 17 years. The percentage of students coming from families engaged in agricultural pursuits was 81. The farms operated by a majority of the parents were not large enough to enable the pupils to engage in farming at home when they left school.

Forty-three per cent of those who enrolled as freshmen completed the four-year course.

Forty per cent of the pupils indicated that they intended to farm at once when they left school. Another 20 per cent said they intended to farm when they had accumulated the necessary capital. The lack of available farms and the necessary capital was believed to hinder many pupils from going directly to farming.

43. SACAY, FRANCISCO M. Certain Bases for Predicting Scholastic Success of Freshmen in the College of Agriculture. Non-Thesis Study, 1936, College of Agriculture University of the Philippines. The Philippine Agriculturist 25:589-598.

Purpose. To determine whether certain factors such as age, high school grades and performance in mental ability and achievement tests could be used as bases in predicting the scholastic success of freshman students in the College of Agriculture.

Method. The Philippine Mental Ability Test and achievement tests prepared by the Bureau of Education were administered to incoming freshmen in 1932 and 1934. The high school grades of the same students were also obtained. Scores in the mental ability test, achievement tests and high school grades were then correlated with average college grades earned during the freshman year.

Findings and Interpretations. The scholastic success of freshman students was found to be positively correlated with mental ability. The coefficient of correlation obtained between mental ability test scores and scholarship was 0.59 in 1932 and 0.61 in 1934.

Grades earned in high school subjects (algebra, physics, geometry, English IV, biology, economics, general history) were positively correlated with scholastic success. In 1932, algebra registered the highest coefficient, 0.49, and physics the next, 0.46.

Age showed a very insignificant relationship with scholastic success, the coefficients of correlation being — 0.06 in 1932 and 0.14 in 1934.

44. SACAY, FRANCISCO M. Occupational Background and Vocational Choice of High School Seniors. Non-Thesis Study, 1938, College of Agriculture, University of the Philippines. The Philippine Agriculturist 26:858-869.

Purpose. To discover the occupational background and vocational intentions of seniors in several academic high schools.

Method. Questionnaire responses were received from 1,151 senior students enrolled in nine academic high schools located in Batangas, Capiz, Cavite, Ilocos Norte, Laguna, Leyte, Nueva Ecija, Pangasinan and Zambales. Principals were asked to administer the questionnaires and return the responses to the college.

Findings and Interpretations. The proportion of high school seniors intending to go to college was: male, 79 per cent; female, 73 per cent, and both sexes, 78 per cent.

More than one-half or 51 per cent of fathers of male high school seniors were farmers and workers in agricultural pursuits and 13 per cent were engaged in commerce. Only a few were in the professions.

Of the male seniors who intended to go to college, 15 per cent wanted to become farmers, 14 per cent lawyers, nine per cent medical doctors, 10 per cent engineers, nine per cent businessmen, six per cent aviators, five per cent soldiers, five per cent teachers, four per cent sailors and three per cent miners. Those males who did not intend to go to college selected the following occupations: farming 28 per cent, business 15 per cent and army 13 per cent.

The most popular occupational choices of female seniors who intended to go to college were: teaching 26 per cent, nursing 19 per cent, homemaking 14 per cent, pharmacy 11 per cent, business 10 per cent, dressmaking six per cent and medicine four per cent.

Only 21 per cent of the students studied planned to follow the occupation of their fathers.

45. SACAY, FRANCISCO M. The Occupational Background and Vocational Interests of Grade VII Pupils. Non-Thesis Study, 1939, College of Agriculture, University of the Philippines. The Philippine Agriculturist 27:624-634.

Purpose. To discover the occupations of parents and the educational intentions of Grade VII pupils.

Method. Questionnaires were administered by principals to 1,040 Grade VII pupils in elementary schools in Batangas, Cavite, Laguna, Rizal and Tayabas Provinces.

Findings and Interpretations. Of the 1,040 pupils, 65 per cent were males and 35 per cent were females. Seventy-three per cent of boys and 60 per cent of the girls hoped to obtain further formal schooling.

The parents of the pupils included in the study was engaged in 63 different occupations. The most common ones were: farmers, 35 per cent; merchants, 14 per cent; shoemakers, six per cent, and carpenters, five per cent.

The proportion of pupils intending to pursue the academic high school curriculum was: male, 46 per cent; female, 71 per cent, and both sexes, 54 per cent. Of the males, 23 per cent selected the agricultural curriculum and 29 per cent the trade curriculum.

Of the male pupils intending to go to high school 29 per cent intended to become farmers, 11 per cent merchants, nine per cent carpenters, seven per cent soldiers, seven per cent engineers, six per cent mechanics and six per cent teachers. Those not intending to go to high school wanted to become: farmers 46 per cent, shoemakers 12 per cent, merchants eight per cent, mechanics six per cent, carpenters five per cent and tailors four per cent.

The vocational choices of the female pupils intending to acquire further schooling were: teaching 27 per cent, dressmaking 24 per cent, nursing 18 per cent, housekeeping eight per cent, pharmacy six per cent and storekeeping four per cent. Those not intending to go to high school selected: dressmaking 43 per cent, housekeeping 24 per cent and storekeeping 15 per cent.

The proportion of students who planned to follow the occupations of their father ranged from 0 to 25 per cent in various fields of work.

46. SACAY, FRANCISCO M. A Study of the College of Agriculture Graduates. Non-Thesis Study, 1940, College of Agriculture, University of the Philippines. The Philippine Agriculturist 28:754-761.

Purpose. To determine the occupations, salaries, places of business, marital status and the extent to which land was owned by graduates of the College of Agriculture.

Method. Questionnaire responses were obtained from 719 of the 1,175 graduates.

Findings and Interpretations. The graduates of the College of Agriculture, University of the Philippines, were engaged in five groups of occupations in 1938: namely educational work in agriculture, 37 per cent; technical work in agriculture, 29 per cent; farming or management of farms, 22 per cent; work slightly related to agriculture, six per cent and work not related to agriculture, six per cent.

The initial salary of graduates when first employed was ₱1,020.00 a year on the average. The salary or earnings in 1938 from the main occupation ranged from ₱4,421.27 for the 1911-1915 graduates to ₱902.33 for the 1936-38 graduates or an average of ₱1,623.97 for all graduates. Forty per cent of the graduates had secondary incomes. The total income from all sources ranged from ₱4,616.32 for the 1911-15 graduates to ₱1,040.94 for the 1936-38 graduates or an average of ₱1,984.85.

The proportion of graduates who owned land ranged from 92 per cent of the 1916-20 graduates to 25 per cent of the 1936-38 group, or an average of 57 per cent of all graduates. The principal methods of acquiring land were by purchase and inheritance.

More than half of the graduates were pursuing their occupations outside their native provinces.

The proportion of graduates who had married ranged from 100 per cent for the 1911-15 graduates to 25 per cent for the 1936-38 graduates or 72 per cent for all cases studied.

Only 42 per cent of the graduates lived in dwellings which they owned. Twenty-eight per cent lived in rental houses and 23 per cent in houses which belonged to their employers.

47. SACAY, FRANCISCO M. A Study of the Relation of Scholarship in College and Other Factors to Income of Graduates. Non-Thesis Study, 1941, College of Agriculture, University of the Philippines. The Philippine Agriculturist 30:58-69.

Purpose. To determine the relationship between college grades and the incomes of college graduates.

Method. Questionnaire responses were received from 472 of the 815 graduates of the College of Agriculture from 1921 to 1935. The records of the registrar were also analyzed to obtain certain data.

Findings and Interpretations. The study showed a coefficient of correlation of 0.28 ± 0.029 between age at graduation and scholarship.

The coefficient of correlation between scholarship and earnings of graduates from their principal occupation was 0.36 ± 0.027.

The coefficient of correlation between total yearly income and other factors were: scholarship, 0.37 ± 0.027; entrance salary, 0.38 ± 0.027; years since graduation, 0.35 ± 0.027 and age at graduation, 0.14 ± 0.031.

48. SACAY, FRANCISCO M. Some Factors Affecting Engagement in Farming of Agricultural School Graduates. Non-Thesis Study, 1952, College of Agriculture, University of the Philippines. The Philippine Agriculturist 36(5):259-262.

Purposes. (1) To determine the principal reasons why a large percentage of individuals who have been trained in vocational schools of agriculture do not engage in farming. (2) To discover ways by which a larger percentage of graduates may be encouraged to return to the farm. (3) To obtain the reaction of students to a system of agricultural loans to finance farming operations.

Method. A questionnaire was sent to principals of agricultural and rural high schools. They were requested to state the reasons why a number of their graduates did not engage in farming and to suggest ways and means for encouraging more graduates to return to the farm.

A second questionnaire was sent to the 160 members of the graduating class of one of the agricultural schools of the Philippines which draws its students from all parts of the country. The farm economics teachers within the school assisted in the distribution, collection and returning of the completed forms.

Findings and Interpretations. Of the 160 high school seniors included in the study only 16 or 10 per cent intended to farm immediately after graduation. Another 139 or 87 per cent planned to engage in farming at some future time. If a sufficient bank loan were available to get them started in farming, 102 or 64 per cent said they would go directly to farming while 36 per cent would pursue other activities.

Lack of capital, lack of land and desire for further education were the reasons most frequently given by students for not going directly to farming. Principals listed lack of capital, lack of land, the hardships of homesteading and the lack of real interest in farming on the part of indigent students who attend the agricultural high school education at little expense.

The seniors estimated that they would need an average loan of almost ₱6,000.00 in order to acquire the necessary land, buildings, tools and animals for farming.

The principals suggested the following ways of encouraging more graduates to go to farming: (1) loans to graduates by government institutions, (2) placement of graduates on farms in new settlement areas and (3) selection of students on the basis of vocational aptitude.

49. SAGUIGUIT, GIL F. A Study of Former Students of Ilocos Norte High School with Special Reference to Their Educational and Occupational Pursuits. Thesis, B.S., 1946, University of the Philippines. 42 p. Library, U. P. College of Agriculture, College, Laguna.

Purpose. To determine the characteristics, educational attainment and occupational pursuits of former Ilocos Norte High School students.

Method. Data were collected by means of personal interviews with 583 former high school students who enrolled as first year students in the Ilocos Norte High School in Laoag in 1935, 1936 and 1937.

Findings and Interpretations. The average age of students upon enrollment in the first year was 14 years. About 76 per cent of the students came from the poblacion, 22 per cent from farming barrios and two per cent from fishing barrios. The occupations of the parents were divided as follows: 28 per cent farmers, 17 per cent teachers and five per cent clerks. The rest of the parents belonged to 47 other occupational groups. Sixty-nine per cent of the former students were married. The average age at marriage was 22 years.

Of 583 students who enrolled in the first year in the high school, 77 per cent graduated, 39 per cent entered college, 0.7 per cent had already graduated and nine per cent were still in college. The number who studied vocational subjects in high school was: home economics, 20 per cent; stenography, three per cent; typewriting, three per cent; hair science, two per cent, and bookkeeping, two per cent. Of the students who went on to junior colleges, 93 per cent prepared for teaching and five per cent for arts and trades. Those who went to four-year colleges were distributed by majors as follows: education, 27 per cent; commerce, 18 per cent; engineering, 16 per cent; law, 13 per cent, and pharmacy, eight per cent.

The most common occupations reported by the 583 former students in 1946-47 were: teachers, 23 per cent; housekeepers, 17 per cent; farmers, eight per cent; merchants and storekeepers, eight per cent; soldiers, seven per cent; laborers, five per cent, and students, 10 per cent. Of the males who did not graduate from high school, 42 per cent were farmers, 16 per cent soldiers and 12 per cent laborers. Of those who graduated from high school but did not continue further studies, 24 per cent were laborers, 19 per cent were merchants or storekeepers and 14 per cent were farmers. Of the females who did not graduate from high school 64 per cent were housekeepers, 18 per cent were storekeepers or merchants and 13 per cent were dressmakers. Of those females who graduated but did not continue in school 47 per cent were housekeepers, 31 per cent were teachers and 13 per cent were dressmakers. Average income of boys was ₱1,312.70; of girls, ₱856.21. The average age of entrance on first job was 20 years.

50. SANDIQUE, JULIAN D. The Screening Effectiveness of the Admission Requirements of the Agricultural Education Curricula of the Central Luzon Agricultural College. Thesis, M.S.A.E., 1959, Central Luzon Agricultural College. 106 p. Library, Central Luzon Agricultural College, Muñoz, Nueve Ecija.

Purposes. (1) To determine the effectiveness of CLAC's admission requirements in screening the applicants to the agricultural education curricula. (2) To find ways of improving these requirements. (3) To determine the causes of student failure and to offer appropriate remedies therefor.

Method. The admission requirements and the causes of student failure were studied. Personal records of the enrollees in the first semester of the schoolyear 1955-1956 were examined

to determine the extent of compliance with the admission requirements. At the end of the semester, student grades were examined to determine in what subjects each of the students failed.

A questionnaire survey was made on the causes of failure among students.

Findings and Interpretations. The admission requirements were not effective in screening the applicants. Many enrollees were found deficient in one or two admission requirements.

Of 191 students from the public secondary schools, 28 per cent failed. Forty-three per cent of 113 students from private secondary schools failed.

The percentage of failure of the 132 students in the two-year course and the 172 in the four-year course were 36 per cent and 31 per cent respectively.

The groups of students within the secondary class standings of 77 per cent, 80 per cent, 83 per cent and 86 percent had incidence of failures of 32 per cent, 25 per cent, 21 per cent and 15 per cent respectively.

Of the total number of students studied, 33 per cent failed.

The principal causes of student failure revealed by the study were: (1) inadequate preparation for college work, (2) low scholastic ability, (3) student's financial limitations and (4) wide variations existing in teachers' marking standards.

51. SAPADEN, FRANCISCO T. A Study of the Elimination of Pupils in the Central and Barrio Schools of Bangui, Ilocos Norte. Thesis, B.S., 1954, University of the Philippines. 31 p. Library, U. P. College of Agriculture, College. Laguna.

Purpose. To determine the extent of elimination of pupils, the amount of schooling received by pupils who left school and the educational and occupational interests of the in-school and out-of-school children of elementary school age in Bangui, Ilocos Norte.

Method. Personal interviews were conducted with 541 pupils (and their parents) who had enrolled in the first grade in 1946.

Findings and Interpretations. The 541 pupils averaged eight years of age at the time of enrollment in the first grade. Fifteen per cent came from the town and 85 per cent came from the barrios. The most common means of livelihood of parents were farming, farming-fishing, fishing and working as a general laborer.

Thirty-one per cent of those who started Grade I graduated. The most common reasons given for leaving school were financial difficulties, distance from school and poor scholastic standing. The pupils eliminated left school at an average age of 12 years.

The youth studied named 16 different vocational choices. Most of the boys wanted to be farmers or carpenters while the girls wanted to be dressmakers and tailors.

52. TAYAMEN, FILEMON D. The College of Agriculture Students: Their Charcteristics, Elimination and Scholarship. Special Problem, Certificate of Agricultural Education, 1938, College of Agriculture, University of the Philippines. The Philippine Agriculturist 27: 786-817.

Purposes. (1) To determine certain characteristics of the student population in the College of Agriculture of the University of the Philippines, such as age, occupational background, economic status and vocational choice. (2) To determine the persistence and elimination of students. (3) To discover the grades obtained and delinquencies received by those who succeeded in obtaining a degree.

Method. Information concerning student characteristics, occupational background, family income and vocational choice was obtained by questionnaires from 260 freshmen who en-

tered the college in 1936 and 1937.

College records of 2,275 students who entered the college from June 1920 to June 1929 were analyzed to obtain data concerning elimination, persistence and level of scholarship.

Findings and Interpretations. Agricultural high school graduates comprised 30 per cent of the new students entering the college. The provinces that sent the largest number of students to the college from 1909 to 1935 were: Laguna, 203 per 100,000 population; Cavite, 96; Zambales, 89; Batangas, 81; Nueva Vizcaya, 75; Pangasinan, 72; Isabela, 70, and Bulacan, 65.

The average age of all freshmen in 1936 and 1937 was 21 years. About one-half were sons of farmers, six per cent were sons of merchants, five per cent were sons of proprietors and four per cent were sons of professional workers in the fields of law, medicine, dentistry and teaching. About one-half of the freshman students came from families having estimated annual incomes of ₱500 or less. Only 26 per cent came from families with annual incomes above ₱1250.

The vocational choices of the freshmen upon entry to college in 1936 and 1937 were 17 per cent farm managers, 15 per cent teachers of agriculture, 12 per cent agronomists, ten per cent animal husbandrymen and nine per cent general farmers.

Of the 1,377 intermediate graduates who enrolled in the College of Agriculture from 1920 to 1928, 17 per cent succeeded in obtaining the Bachelor of Agriculture degree. Of the 898 high school graduates who entered from 1920 to 1929, 38 per cent graduated. Of the 2,275 intermediate and high school graduates studied, 23 per cent were able to obtain a degree.

Only three per cent of the intermediate school graduates completed the college course without receiving grades of 4 or 5. This same figure for academic high school graduates was four per cent and for agricultural high school graduates six per cent. Eighteen per cent of the students from academic intermediate schools completed college without being judged delinquent, on probation or extremely delinquent. Twenty-three per cent of the students coming from academic high schools also achieved this feat.

53. VEGA, GLORIA R. A Study of the Occupational and Educational Situation, Problems and Interests of the Youth in the Barrios of Los Baños, Laguna. Thesis, B.S., 1952, University of the Philippines. 38 p. Library, U. P. College of Agriculture, College of Agriculture, College, Laguna.

Purpose. To determine the educational and occupational status, the problems and interests of young people in Los Baños, Laguna.

Method. Personal interviews were conducted with 306 young men and women between the ages of 15 and 24.

Findings and Interpretations. The most frequent occupations of the parents of the interviewees were: farmers, laborers and fishermen. Eighteen per cent of the youths were married. The boys married at an average age of 19 and girls at 18.

Thirty-four per cent of the youths were still in school. Boys left school at an average age of 13 and girls at 12. The most frequent reasons given for leaving school were financial difficulties, outbreak of the war and loss of interest. The out-of-school boys and girls both completed an average of five grades. Of the out-of-school youths 21 per cent were unemployed and 11 per cent had only part-time work. Of the boys who were working, the largest number was engaged in fishing, farming, vending and common labor. The girls were housekeepers, vendors and storekeepers. The majority of the youths interviewed did not express any occupational preference or definite educational plan. The average annual income of those employed was ₱740.70.

Liwayway, Bulaklak and comic magazines were the most commonly read but only 15 per cent of the youth were subscribers. Most homes did not have any reading matter. Sixty-eight per cent of the youths did not belong to any organizations. Reading, movies, chatting and listening to the radio were the most commonly reported recreational activities.

The most important problems of the youth interviewed, fall in the areas of occupational adjustment, financial security, educational preparation, constructive use of leisure time, marriage and the establishment of a home.

The researcher concluded that the local community should develop a program to serve the needs of the young people.

54. ZABLAN, FLORENDO FLORES; MENDOZA, IRENEO BRAGANZA; REMEDIO, NORBERTO CAL, and DAGOC, PEDRITO. Socio-Economic Status of the Graduates of the Bukidnon National Agricultural School and the Tenant-Farmers Farming in Managok. Thesis, B.S., 1958, Mindanao Agricultural College. 41 p. Library, Mindanao Agricultural College, Musuan, Bukidnon.

Purposes. (1) To gather accurate information on the socio-economic conditions obtaining in a selected segment of the rural areas which may serve as guideposts in planning and implementing programs to improve rural conditions by interested public and private entities. (2) To compare the farming efficiency, social and economic conditions and standard of living of former graduates of the Bukidnon National Agricultural School (now Mindanao Agricultural College) and non-graduate tenant farmers in the area.

Method. The survey method was employed. Data on farm business and social conditions for the crop year 1956-57 were obtained from interviews with the farmers, their wives and other members of the families. These data in the Division of Agricultural Economics and pre-tested in the field. All were recorded on schedules prepared farmers, graduates of the BNAS and non-graduates farming in the school reservation were included in the study.

Findings and Interpretations. The study disclosed the following: (1) Only 12, or 24 per cent, of the 50 graduates given lots in 1946 were actually farming at the time the survey was made (1957-1958); the rest employed tenants. (2) Owner-operators had longer farming experience and residence than the tenant-operators. (3) Owner-operators had larger cultivated hectarage than tenant-operators. On the average, operators on both tenure bases cultivated bigger farms than the national average. (4) Rice and corn were the most important crops raised by the operators. Most of the farms were diversified. (5) As compared with tenant-operators, owner-operators had more capital, larger investment, owned more capital, bigger farm receipts and expenses, more farm privileges, higher labor income and earnings, higher family income and amount available for family living and higher farming efficiency. (6) Seventy-six per cent of the houses included in the survey were roofed with cogon and the rest with galvanized iron sheets or nipa or a combination of both. (7) The creek was the major source of water for bathing and laundry purposes and surface wells for household use. (8) A majority of the homes had inadequate means of waste disposal. (9) Petroleum lamps were the chief source of lighting for the homes surveyed. (10) Owner-operators generally had higher educational attainment than the tenants and the children of the former generally were at school if of school age while those of the tenants generally were out of school. (11) The chief sources of news were the local dailies and magazines which came a week behind schedule.

The study also disclosed that both tenure groups did not employ many of the approved farm management and

cultural practices such as applying fertilizers, using green manuring, following crop rotation and the like. Their reluctance was based on past experience with unforeseen difficulties such as rat infestations and droughts. They believed that if the same or similar incidents happened they would have heavier losses if they had invested time and money in carrying out approved practices. On the part of the tenants, this same viewpoint and insecurity of tenure are two of the reasons why they were quite reluctant to employ approved farm management and cultural practices.

The following recommendations were given as a result of the study: (1) More studies like this should be conducted to find out how the other graduates of the college are faring in order to be able to improve the instruction. (2) More help should be given graduates and other farmers in selecting the best varieties of crops and good breeds of animals should be made available to them. (3) The operators should organize themselves so as to take advantage of the benefits derived from cooperatives, especially for getting credit to expand their production. (4) Closer contacts between the college and its graduates would be highly desirable.

CLASSIFIED INDEX OF STUDIES

ADMINISTRATION: 10, 39, 40

ADULT FARMER CLASSES: 18

COURSE OF STUDY AND CURRICULUM:

- General, 8, 30
- Animal industry, 17, 34
- Farm management and agricultural economics, 29, 54
- Plant industry, 16
- Young and adult farmer, 18, 32

FOLLOW UP OF GRADUATES

- College, 1, 9, 46
- High school, 1, 7, 23, 33, 35, 37, 38, 49, 54
- Elementary, 2, 4, 5, 15, 28

FOREIGN SCHOOLS AND PROGRAMS: 30

GUIDANCE AND ORIENTATION:

- General, 6, 19, 25, 31, 36, 51, 53
- Occupational choice and opportunity, 2, 4, 5, 13, 15, 24, 27, 42, 44, 45, 48, 51, 52

HISTORY, PHILOSOPHY AND OBJECTIVES: 3, 14, 39

MEASUREMENT AND EVALUATION: 40, 43, 47, 50, 52

TEACHER EDUCATION:

- Pre-service, 11, 20, 22, 26, 41
- In-service programs and procedures, 11, 12, 21, 22, 41

TEACHING MATERIALS: 12

TEACHING PROCEDURES: 17, 34